mental health digest

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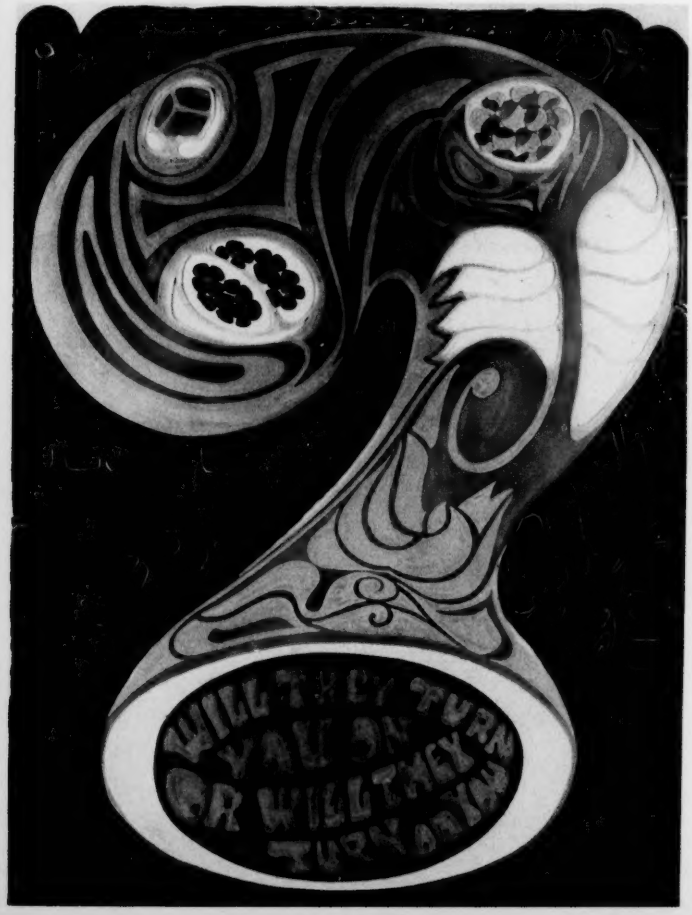

cover story

This poster (in four fluorescent colors) will be displayed on U.S. Post Office trucks across the country during the month of July. The poster is one part of a nationwide drug abuse education campaign being undertaken by the National Institute of Mental Health. The media campaign includes radio and television spot announcements, newspaper and magazine articles and features, car cards, posters and other materials. A free copy of the cover poster and other drug abuse information is available from the NIMH, Box 1080, Washington, D.C. 20013.

mental health digest

The *Mental Health Digest* is a monthly publication of the National Institute of Mental Health. Designed to reflect the whole spectrum of mental health and to present a broad sampling of scientific subject matter and professional points of view, the *Digest* contains condensations of selected current journal articles, reviews, Federal and State program documents, and other pertinent material.

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Learning of Visceral and Glandular Responses

NEAL E. MILLER

Since ancient times, reason and the "voluntary" responses of the skeletal muscles have been considered superior, while emotions and the "involuntary" glandular and visceral responses have been considered inferior. Many psychiatrists have made the distinction between hysterical and other symptoms mediated by the cerebrospinal nervous system and psychosomatic symptoms mediated by the autonomic nervous system. Students of learning have distinguished between a "lower" form, called classical conditioning and thought to be involuntary, and a "superior" form called trial-and-error learning, operant conditioning, type II conditioning, or instrumental learning and believed to be responsible for voluntary behavior. Finally, these distinctions have coalesced into the belief that the instrumental learning is possible only for skeletal responses mediated by the cerebrospinal nervous system, while classical conditioning is the only kind possible for the presumably involuntary visceral and emotional responses mediated by the autonomic system.

I have been impressed with the similarity between the laws of classical conditioning and those of instrumental learning. Failing to see a dichotomy, I have assumed that there is only one kind of learning. This assumption has demanded that instrumental training procedures be able to produce learning of visceral responses.

Experiments on Animals

One difficulty of investigating instrumental learning of visceral responses stems from the fact that the easiest-to-measure responses — heart rate, vasomotor responses, galvanic skin response—are affected by skeletal responses. So I planned to paralyze skeletal responses with curare. Since it seemed unlikely that curarization would be easy to use with humans, I concentrated on animals.

Success with salivation—The first clear-cut results were secured in an experiment on salivation of dogs. We used water as a reward for thirsty dogs. We rewarded dogs in one group when they showed spontaneous salivation, so that they would be trained to increase salivation, and rewarded dogs in another group when there was a long interval between spontaneous bursts, so that they would be trained to decrease salivation. The learning proceeded slowly, but statistical analysis showed that each trend in the predicted rewarded direction was highly reliable.

Since the changes were in opposite directions, they cannot be attributed to classical conditioning. But the group rewarded for increases seemed to be more active; perhaps we were changing the level of activation, and this change was affecting the salivation. We decided to paralyze the dogs with curare, but found that curare had a disastrous effect: it elicited copious, continuous salivation that was so viscous it gummed up the apparatus.

Heart rate—In the meantime, we tried to produce instrumental learning of heart rate in rats paralyzed by curare to prevent them from "cheating" by muscular exer-

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tion to speed up the heart or by relaxation to slow it down. Since there are not many ways to reward an animal paralyzed by curare, we used electrical stimulation of rewarding areas of the brain. Those rewarded for an increase in heart rate showed an increase, and those rewarded for a decrease showed a decrease. But the changes were small so we used the technique of "shaping" – immediately rewarding very small and frequently occurring changes and, as soon as these had been learned, requiring progressively larger changes as the criterion for reward. In this way, we produced changes averaging 20 percent in either direction.

Key properties of learning: discrimination and retention—One characteristic of skeletal responses is that a discrimination can be learned, so that the responses are more likely to be made in the stimulus situations in which they are rewarded than in those in which they are not. Before the beginning of discrimination training one rat had slowed its heart rate from 350 beats per minute to 230 beats per minute. At the beginning of discrimination training, there was no appreciable reduction in heart rate associated with the "time-in" stimulus. At the end of discrimination training, the heart rate during "time-out" remained approximately the same, but when the "time-in" stimulus came on, the heart slowed down and the criterion was met. Instrumental visceral learning has at least one property of instrumental skeletal learning—ability to be brought under the control of a discriminative stimulus. Another property of instrumental learning of skeletal responses is that it is remembered. Rats that had been given one training session were returned to their home cages for three months. When curarized and returned to the experimental situation for nonreinforced test trials, rats in both the "increase" and the "decrease" groups showed good retention.

Escape and avoidance learning—Is visceral learning limited to reinforcement by direct stimulation of the brain, or can it be reinforced by other rewards? We performed an experiment with the other reward that can be used on rats paralyzed by curare—avoidance of mild electric shock. A signal was turned on; after it had been on for 10 seconds it was accompanied by mild electric shock to the rat's tail. During the first 10 seconds the rat could turn off the signal and avoid the shock by changing its heart rate. If it did not make the correct response, the shocks were delivered until the rat made the correct response, which immediately turned off the shock and signal. For one group of rats, the correct response was an increase in heart rate; for the other, a decrease. After the rats had learned to make small responses, they had to make larger ones. During training the signals were interspersed with "safe" signals, i.e., not followed by shock; the heart rate was also recorded during "blank trials"—trials without signals or shocks. Each rat changed its heart rate in the rewarded direction. As training progressed, the signal began to elicit a greater change in the rewarded direction than during "blank trials"; the "safe" signal came to elicit a change in the opposite direction, toward the initial baseline. Visceral responses can be reinforced by rewards other than direct electrical stimulation of the brain. The rats also discriminated between the shock and the "safe" signals.

Transfer to noncurarized state: more evidence against mediation—Were the rats learning to send out from the motor cortex central impulses which would have activated the muscles had they not been paralyzed? Were these central impulses affecting heart rate by inborn connections or classically conditioned ones? If the changes were produced in this way, we would expect that, during a test without curare, a rat that showed learned changes in heart rate would show movements in muscles that were no longer paralyzed. We trained two groups of curarized rats to increase or decrease heart rate to avoid, or escape from, electric shock. When these rats were tested two weeks later in the noncurarized state, the habit was remembered. Immediately subsequent retraining without curare produced additional changes of heart rate in the rewarded direction.

It is difficult to reconcile these results with the hypothesis that the differences in heart rate were mediated by a difference in respiration or amount of general activity, in view of research which shows that for muscular activity to affect heart rate it must be vigorous. While it is difficult to rule out the possibility that changes in heart rate are mediated by central impulses to skeletal muscles, the possibility is less attractive for other responses, such as intestinal contractions and the formation of urine by the kidney. Therefore, experiments were performed on learning of other visceral responses and on the specificity of that learning.

Specificity: intestinal versus cardiac—If visceral learning has the same properties as instrumental learning, it should be possible to learn a specific visceral response independently of others. First we had to find a visceral response that could be recorded and rewarded. We decided on intestinal contractions, and recorded them with a little balloon filled with water thrust a little beyond the anal sphincter. Changes of pressure in the balloon were transduced into electrical voltages which produced a record on a polygraph and also activated an automatic mechanism for delivering the reward, which was electrical stimulation of the brain. During habituation, there were some spontaneous contractions. When the rat was rewarded for keeping contractions below a certain amplitude for a certain time, the number of contractions was reduced. After relaxation had been learned, the reward was delivered whenever the amplitude of contractions rose. This training increased the number of contractions.

After convincing ourselves that instrumental learning of intestinal responses was possible, we designed an experiment to test specificity. For all rats intestinal contractions and heart rate were recorded, but half were rewarded for one response and half for the other. Each group was divided into two subgroups, rewarded for increased and for decreased response. The group rewarded for increases in intestinal contractions learned an increase, those rewarded for decreases learned a decrease, but neither showed an appreciable change in heart rate. Conversely, the group rewarded for increases in heart rate showed an increase, the group rewarded for decreases showed a decrease, but neither showed a change in intestinal contractions. That each type of response changed when it was rewarded rules out the interpretation that the failure to secure a change when that change was not rewarded

could have been due to a homeostatic regulation of that response or an inability of our techniques to measure changes reliably under the particular conditions of the experiment.

Kidney function—To see if the rate of urine formation could be changed, a catheter, permanently inserted, was used to prevent accumulation of urine by the bladder, and the rate of urine formation was measured by an electronic device for counting minute drops. All rats rewarded when the intervals between times of urine-drop formation lengthened showed decreases in the rate of urine formation, and all rats rewarded when the intervals shortened showed increases. It appears that the learned changes in urine formation were produced by changes in the rate of filtration, which, in turn, were produced by changes in the rate of blood flow through the kidneys.

Gastric changes—In the next experiment we used a photoelectric plethysmograph to measure changes, presumably in the amount of blood, in the stomach wall. A tube painted black except for a small spot was inserted into the rat's stomach. The same tube was used to hold the stomach wall against a glass window inserted through the body wall. The tube was left in that position. A bundle of optical fibers could be slipped into the tube so that the light beamed through it would shine out through the unpainted spot in the tube inside the stomach, pass through the stomach wall, and be recorded by a photocell on the other side of the glass window. When the amount of blood in the stomach wall increased, less light would pass through.

We rewarded the rats by enabling them to avoid or escape from electric shocks. Some were rewarded when the amount of light passing through the stomach wall increased, others when the amount decreased. Fourteen of 15 rats showed changes in the rewarded direction. Thus, we demonstrated that the stomach wall can be modified by instrumental learning. There is reason to believe that the learned changes were achieved by vasomotor responses affecting the amount of blood in the stomach wall or mucosa, or in both.

Peripheral vasomotor responses—We next studied learning of peripheral vasomotor responses. The amount of blood in the tail of a curarized rat was measured by a photoelectric plethysmograph, and changes were rewarded by electrical stimulation of the brain. All rats rewarded for vasoconstriction showed that response and all rats rewarded for vasodilatation showed that response.

We then determined the limits of the specificity of vasomotor learning. The pinnae of the rat's ears were chosen because the blood vessels are innervated by the sympathetic branch of the autonomic nervous system, the branch that has been thought to fire as a unit. We put photocells on both ears of the rat and connected them to a bridge circuit so that only differences in vasomotor responses were rewarded by brain stimulation. To our surprise and delight this experiment worked. Each rat rewarded for relative vasodilatation of the left ear showed that response, while each rat rewarded for relative vasodilatation of the right ear showed that response.

These results cannot be byproducts of changes in heart rate or blood pressure, as these would affect both ears equally. They show that

vasomotor responses mediated by the sympathetic nervous system are capable of greater specificity than has been believed or that the innervation of the blood vessels in the pinnae is not restricted to sympathetic-nervous-system components, and involves functionally significant parasympathetic components. Such changes could account for specific psychosomatic symptoms.

Blood pressure independent of heart rate—Another experiment showed that when changes in systolic blood pressure are specifically reinforced, they can be learned. Blood pressure was recorded by means of a catheter in the aorta, and the reward was avoidance of, or escape from, mild electric shock. All rats rewarded for increases in blood pressure showed further increases, while all rewarded for decreases showed decreases. For no group was there a change in heart rate or temperature during training. The learned change was relatively specific to blood pressure.

Transfer from heart rate to skeletal avoidance—Could instrument learning of heart-rate changes have some generalized effects? To look for such an effect, a shuttle avoidance apparatus was used, in which, when a danger signal was given, the rat had to run from compartment *A* to compartment *B*. If he ran fast enough, he avoided the shock; if not, he had to run to escape it. The next time the danger signal was given, the rat had to run in the opposite direction, from *B* to *A*.

Learning in this apparatus is an inverted U-shaped function of the strength of the shocks, with shocks that are too strong eliciting emotional behavior instead of running. Rats were trained in this apparatus with a level of shock approximately optimum for naive rats of this strain. Rats that had been rewarded for decreasing their heart rate learned well, but those that had been rewarded for increasing their heart rate learned less well, as if their emotionality had been increased. This experiment demonstrates that training a visceral response can affect the subsequent learning of a skeletal one, but additional work will be required to prove the hypothesis that training to increase heart rate increases emotionality.

Visceral learning without curare—Will learning in the noncurarized state be easier or harder? We have evidence that rewarding (with avoidance or escape) one group of freely moving rats for reducing heart rate and another group for increasing heart rate produces a difference between the two groups. That this difference was not due to the effects of the overt performance of skeletal responses is shown by the fact that it persisted in tests during which the rats were curarized. On retraining without curare, differences in activity and respiration that were present earlier in training continued to decrease, while the differences in heart rate continued to increase.

Learned changes in brain waves—Electrodes placed on the skull or touching the brain record summative effects of electrical activity over a considerable area of the brain. Such effects are called brain waves, and the record is an electroencephalogram. When the animal is aroused, the electroencephalogram consists of fast, low-voltage activity; when the animal is drowsy or sleeping, it consists of slower, higher-voltage activity. Can brain activity be modified by reward of changes in brain activity? The subjects were freely moving cats. To have a reward that was under control and did not re-

quire the cat to move, stimulation of the medial forebrain bundle, a rewarding area of the brain, was used. Such stimulation produced a slight lowering in the average voltage of the electroencephalogram and an increase in arousal. To control for these and other unlearned effects, one group was rewarded for changes in the direction of high-voltage activity and another for changes in low-voltage activity. Both groups learned. The cats rewarded for high-voltage activity showed more high-voltage slow waves and tended to sit staring into space. The cats rewarded for low-voltage activity showed more low-voltage fast activity, and appeared to be aroused, pacing restlessly, sniffing, and looking here and there. This training modified the brain waves and the level of the behavioral activity.

To rule out direct sensory consequences of changes in muscular tension, movement, and posture, an experiment was performed on rats paralyzed by means of curare. Both rewarded groups showed changes in the rewarded direction; a subsequent nonrewarded rest increased the number of high-voltage responses in both groups; and when the conditions of reward were reversed, the direction of change in voltage was reversed.

Human Visceral Learning

Are people capable of instrumental learning of visceral responses? Recent studies report successful use of instrumental training to modify heart rate, vasomotor responses, and galvanic skin response. One question is whether the changes represent true instrumental learning of visceral responses or the unconscious learning of skeletal responses that can produce visceral reactions. The investigators who have challenged the belief in the inferiority of the autonomic nervous system are developing ingenious controls so that their cumulative results are becoming increasingly impressive.

Cause of psychosomatic symptoms—Evidence for the instrumental learning of visceral responses removes the basis for assuming that psychosomatic symptoms involving the autonomic nervous system are different from those functional symptoms that involve the cerebrospinal nervous system.

Suppose a child, terror-stricken at going to school because he is unprepared for a test, has a variety of autonomic symptoms, such as a queasy stomach at one time and pallor and faintness at another; his mother, who may be particularly concerned about cardiovascular symptoms, says "You are sick and must stay home." The child feels relief from fear, which should reinforce the cardiovascular responses producing pallor and faintness, and the child should learn to respond with that symptom. Another child whose mother is particularly concerned by gastric distress could learn to have a queasy stomach. We need clinical research to determine how frequently, if at all, the conditions sufficient for such learning of visceral symptoms actually occur.

Individual and cultural differences—Visceral learning could account for individual and cultural differences. An individual may have a tendency to respond to different stresses with the same profile of autonomic responses, while other individuals may have tendencies to respond with different profiles. Differential conditions of learning might account for some of these differences in patterns of autonomic response.

Such learning might account for instances in which an individual re-

sponds to the same stress in different ways. A boy who receives a bump may learn to inhibit the secretion of tears since his peer group will punish crying by calling it "sissy." But the same boy may burst into tears when he gets home because his mother does not punish weeping and may regard tears with sympathy. The amount of crying reported for children seems to be related to the way in which society reacts to their tears.

Given social conditions under which any form of illness will be rewarded, the symptoms of the most susceptible organ will be the most likely ones to be learned. Furthermore, some stress may be so strong that the innate reactions to them produce damage without any learning.

Therapeutic training—The success of work with animals suggests that we should be able to produce therapeutic changes. If a patient who is motivated to get rid of a symptom understands that a signal indicates a change in the desired direction, that signal could serve as a reward. As patients find that they can secure some control of the symptom, their motivation should be strengthened. Such a procedure should be worth trying on any symptom that is under neural control, that can be continuously monitored by modern instrumentation, and for which a given direction of change is indicated—cardiac arrhythmias, spastic colitis, asthma, and cases of high blood pressure that are not essential compensation for kidney damage. While it is too early to promise cures, it will be worthwhile to investigate the therapeutic possibilities of improved instrumental training techniques.

Heads and Seekers. Drugs on Campus, Counter-Cultures and American Society

KENNETH KENISTON

We have little factual information about drugs on campus. What is known about student drug users comes largely from a small minority who are sufficiently disturbed to seek help. Yet enough information is available to permit extrapolation to a picture of the "student drug abuser."

Rates and Places

Most Americans use drugs like aspirin, alcohol, sleeping pills, stimulants, ethyl alcohol, or nicotine. What is novel is student use of drugs to alter mood and state of consciousness. Most student drug use involves the use of hallucinogens, marihuana, or other psychotomimetic drugs. Let us accept "drug user" as anyone who has ever tried any hallucinogen, and examine the pattern of use that results from accepting this definition.

Student drug use is indeed increasing, but estimates are exaggerated. Even at the colleges where drug use is prevalent surveys arrive at estimates of 5–75 percent of students who have "ever used" hallucinogens. These studies tend to have been done at colleges like California at Berkeley, Wisconsin at Madison, Michigan at Ann Arbor, Harvard, Stanford, Yale, Cal. Tech, Princeton, Antioch, Swarthmore, Wesleyan (Connecticut), Goddard, and Reed. Approximately 3 percent of students attend these institutions. Among the remaining 97 percent, drug use is rare or nonexistent.

The impression of high rates of drug use stems in part from the visibility of the colleges where use is common. Highest rates are found at small, progressive, liberal arts colleges, where more than 50 percent of the students have tried marihuana or other hallucinogens.

Farther down the list are Harvard, Stanford, Yale, and Chicago, some State universities with a tradition of intellectual excellence and academic freedom, and technological institutions, like Cal. Tech and M.I.T., notable for the high ability of their students. Here rates of 10–50 percent are found. Still farther down are State universities with a lesser reputation for academic excellence and intellectual or personal freedom, where rates are 5–20 percent. At the bottom of the list are colleges that enroll most students—State teachers colleges, junior colleges, community colleges, normal schools, smaller religious and denominational colleges, and most Catholic colleges and universities, where drug use rarely exceeds 5 percent.

Nor are drug users randomly distributed within any institution. They are likely to be found in the intellectual, humanistic and "introspective" fields (e.g., music, literature, drama, the arts, and psychology). Students who use drugs are characterized by higher grades than those who do not.

Tasters, Seekers, and Heads

Up to half of the students listed as "users" have "used" drugs no more than three times and have no plans to continue. Probably the largest group are *tasters.*

Condensed with permission from the *American Scholar,* 38 (1) :97–112, 1968–69.

If we eliminate the tasters, we are left with less than 5 percent of the college population. These students have used drugs (usually marihuana) several times and "plan" to continue. Within this group there are distinctions. The largest group have used drugs a few times and not regularly. Their drug use is part of a pattern of experimentation and search for relevance. Such students can be termed *seekers:* they seek in drug use a way of intensifying experience, expanding awareness, breaking out of deadness and flatness, or overcoming depression.

Finally, there is a small group who have made drug use a focus of college life. Such students are called *heads* (potheads or acidheads) and they are the most knowledgeable about the effects, side effects, interactions, and meanings of the drugs available to students.

Even among heads, drug use does not constitute the psychopathological and self-destructive phenomenon it is said to be. Many such students endure experimentation with marihuana (and other hallucinogens or amphetamines) without suffering enduring personal disorganization. Judged by such criteria as ability to work, love, and play, they do not seem especially less "mentally healthy" than before their drug experiences.

A smaller group suffers serious ill effects from even a single experience. Students with preexisting psychopathology are most vulnerable. And these students seem likely to experiment under conditions that experienced drug users consider adverse—intense depression, personal isolation, and unpleasant surroundings.

Even here, short-term changes and long-range effects need to be distinguished. There are some individuals who "regress" into a drug-using subculture, but reemerge into a productive relationship with their fellow man and society. One disadvantage of labeling drug users "felons" or "addicts" is that it may make it impossible for them to return to a productive role in society.

The Question of Motives

Drug use is no different from other behavior in that many motives can produce it. Drug use is affected by motives and forces *within* the individual, and by what is happening *outside* in his interpersonal environment and social and political world. Any effort to delineate motivations is an oversimplification, e.g., there are individuals who share characteristics with drug users but do not use drugs because they are not available, or individuals who have little in common with drug users, but who use drugs. With these qualifications, two patterns of motivation can be defined.

Consider the "seekers." They are better-than-average students, intellectual and antivocational, and likely to be uncertain as to their careers. They come from upper-middle-class professional and business families, and are intense, introspective, and involved in their academic work from which they hope to find "solutions" to problems of life. They can be orderly, regular, and highly organized. They are opposed to the war in Southeast Asia, do not express anger readily, and are often idealistic. Such students are less seekers after grades or professional expertise than seekers after truth. They read widely, be it in the theater of the absurd, modern existentialist literature, or writings of the New Left. They are not "alienated" from American society, but

they have not made their minds up whether it is worth joining. Often, their life-styles and the exertions required to do well make such students feel "out of touch" with themselves. They make high demands upon themselves, upon experience, and upon life; contrasted with these demands, their experience is often barren, flat, and dull.

Marihuana and the hallucinogens fit with their search for experience. They promise a new kind of experience, as well as intensity, heightened sentience, intensified artistic perceptiveness, and self-understanding.

The "head" is different. The head is a member of a subculture in which he finds an identity that enables him to drop out of the Establishment from which he comes and toward which he was headed. Drug-using dropouts usually stay in the hippie-world about a year and a half. Most return to their families and to college. Only those with artistic talent or psychiatric problems (or both) are likely to remain. Heads are genuinely alienated from American society. The basic societal problem is not so much political as esthetic. What matters is the interior world, and, in the exploration of that world, drugs play a major role.

A second characteristic of heads is a feeling of estrangement from their own experience. They are aware of the masks, facades, and defenses people erect and are critical of the social "games" they see around them. They feel compelled to root out any "defense" that prevents awareness of inner life; self-deception, lack of self-awareness, or "phoniness" are cardinal sins. Despite their efforts alienated students feel separated from self and others. Such students find drugs that promise to heighten experience a tempting way out of the shell.

A third characteristic is a fantasy of fusion and merger, a semiconscious concept of mystical union with nature, their own inner lives, or with other people—communication that requires no words, a oneness with nature, people, or the world that characterizes religious experience. The hallucinogens are attractive, for they alter the boundaries of body and self.

There are a few heads for whom drug use is a symptom of and a trigger for serious psychopathology. Some of those most drawn to chronic drug use are those who can least tolerate it.

The Pressure for Academic Performance

Colleges where drug use is common are usually "high pressure" colleges. Many "intellectual" colleges make efforts to mitigate these pressures, but the students are likely to *feel* pressured, both by a desire to excel and by requirements of graduate schools.

The more intellectual colleges lack the traditional pastimes of fun, fraternities, and football. What is valued is the ability to delay, postpone and defer immediate gratification in the interest of acquiring a liberal education. Such "elite" colleges have few pressures to become relaxed, joyous, interpersonally skilled, courageous, or physically expressive. The student must work terribly hard to be "really good in his field." A bad course, a bad year, or taking a year off may mean not getting into graduate school or—worse—getting drafted.

There is much to be said for these pressures. Students are serious, well-informed, honest, and morally

concerned. Yet in describing the self-generated and educationally-generated pressure upon them, I have used the word "performance" advisedly. "Performance" suggests alien activity, acting to impress others. And to such students, intellectual performance is a kind of "role-playing" of the worst sort. One source of the demand for "relevance" and "student power" is that much academic and intellectual activity is "alien" to the "real" interests and concerns of the student.

Even when academic performance is impeccable, "really important" questions remain unanswered: What really matters? What is life about?" The pursuit of academic competence must be supplemented by a private, less academic, noncurricular quest for the meaning of life.

The Experiential Counter-Culture

The "better" colleges rarely attempt to provide students with answers to their existential questions. They expect them to arrive at solutions to the riddles of life, while getting ahead in the academic world. To the sophisticated undergraduates, the traditional avenues seem irrelevant, exhausted, insincere, or superficial.

A new informal subculture has emerged. Although the students are headed for professional careers, they privately focus on present experience, not long-range goals. The subculture stresses genuineness, adventure, spontaneity, sentience, and experimentation—even as one worries about Graduate Record Examinations.

Along with focus on present and "existential" values goes a tolerance for experimentation. Youth is defined (by youth itself) as a time for exploration, trial and error, and deliberate efforts to enlarge, change, or expand personality. Self-exploration, psychotherapy, sexual experimentation, travel, "encounter groups," reverence for nature, and "sensitivity training" are tools in the pursuit of meaning—along with drug use.

Drugs as a Commentary on Society

Many factors—social change, possibilities for total destruction of the world, domestic and international violence, specialization and bureaucratization of life, and others—are relevant to creating the context within which drug use has become legitimate. Of these, three are particularly relevant:

Stimulus flooding and psychological numbing—Modern man is subjected to a flood of unpredictable stimulation; he continually exposes himself to novel and unanticipatable experience. This stimulus inundation produces a self-protective reaction we can term "psychic numbing."

The flooding of stimulation is related not only to the psychological conditions and institutional pressures but, indirectly, to the nature of perception and experience in advanced technological society. Use of drugs is attractive because drugs have the effect of dissipating, blurring, or breaking down the boundaries of individual selfhood and personality.

Automatic affluence—No society has provided its citizens with the automatic abundance that our society provides to most Americans. As work, success, and achievement decline in importance, new values are replacing them.

Two alternatives have been tried. The first is the solution of the politi-

cal activist, who accepts traditional values, especially those emphasizing justice, equality, opportunity, and freedom, and insists that these values be more thoroughly practiced.

The second turns to a critique of the premises and assumptions upon which technological America is based. Instead of equality, it champions diversity; instead of extension of affluence, it questions the meaning of affluence. Fulfillment and personal wholeness are more important than abundance and achievement. "Self-actualization" is the goal; "let each man do his thing" is the motto.

Insofar as an individual's effort is to extend affluence, he is immune to the appeals of the drug-using world. But insofar as his focus is upon self-fulfillment, personal change, and spiritual or humanistic fulfillment—this focus is consistent with the use of drugs.

Sociopolitical disenchantment—It is no accident that activists are rarely intensive drug users and that the denizens of the hippie subculture are rarely capable of political activity. Although some individuals alternate, it is difficult to be an active reformer and a "head" at the same time.

This argument suggests that disenchantment with social action is related to the development of an outlook conducive to drug use. Specifically, the change in student attitudes toward political life and social reform since the assassination of President Kennedy seems connected to the rise of drug use. Many American college students have come to associate political involvement with immorality and even with genocide. The demise of the Civil Rights Movement and the collapse of the War on Poverty have helped change the climate of opinion about political reform.

Political and historical events do not have a direct relationship with drug use, but the political climate of the past few years has created a negative view of the possibility of meaningful involvement within the established institutions of the society, at the same time that it has convinced many students that society needs reform. Drug use can be a kind of cop-out, because there seems to be no other alternative. Student drug use *is* a commentary upon American society and an indirect criticism of society's inability to offer the young exciting, honorable, and effective ways of using their intelligence and idealism to reform our society.

Work with Adolescents. Brief Psychotherapy with a Limited Aim

MARJORIE P. SPRINGE (in collaboration with SHEILA BAKER)

The ideas presented here are the outcome of experience in an experimental "'Walk-in-Centre" for young people between the ages of 14–22. Our approach was influenced by intensive analytic work at the Hampstead Child Therapy Clinic.

Staff of the Young People's Consultation Centre works on the assumption that young people who seek help must get help at once and not be kept waiting because of caseloads or other administrative considerations. This approach forces the necessity of distinguishing between clients whom we can hope to help in relatively few interviews and those for whom we must provide more intensive treatment.

We find that most clients come because of emotional disturbances of which they were aware. Others come with a practical problem which masks an emotional one. Only rarely are we asked for practical advice.

Our initial interviews can go wrong in various ways. We might attempt to uncover the underlying conflict too quickly and frighten off our patient, or we might tread too carefully and appear to accept the presenting problem as the reason for seeking help. Failure to refer to underlying conflicts might imply that the interviewer would be shocked if he knew about them. This has particular relevance to masturbation and homosexuality.

We worked on the assumption that adolescence implies a psychological process of adaptation to the physiological changes of puberty, and differentiate between three stages of adolescence; for each stage there are characteristic defense mechanisms. Stage 1 (12–14 years) is dominated by bodily changes and responses to them. Denial and repression is seen in the attempt to cover up implications of the changes. Stage 2 (14–15 years) is characterized by the reawakening of infantile sexual wishes to the parents but colored by the fact that the adolescent is physically capable of acting upon these urges. Defensive regression to preoedipal fantasies is difficult to differentiate from true fixation and this has a bearing on diagnosis. The third stage (16 upwards) sees the tentative establishment of relationships with new love objects of the same age group. It is a phase of contradictions and of impulsive acting out.

Childhood and adolescent disturbances differ from later emotional disturbances in that they are likely to impede developmental processes. In brief intervention, we will often be satisfied if forward development can be set in motion even if we know that some personality problems are untouched. We hope that the developmental process itself will take over and that symptoms which could be pathological will sort themselves out.

At our initial interview, we cannot be certain whether symptoms are transitory adolescent features or indications of deeper pathology. If forward moves take place, this is in itself diagnostic, implying that we are dealing with young people in

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whom personality development is still fluid but hindered by a specific holdup in the adolescent process itself. In this group that limited help enables our clients to face their most pressing problems—those of dealing with physiological changes and conflicts surrounding severing the tie with the parents. Relief in these areas often brings improvement in all areas—the client is able to make new relationships at the appropriate social and sexual level and develop satisfactory sublimations.

A difficulty of brief psychotherapy with adolescents is that we are dealing with a phase in which repression and denial are the main and normal defense mechanisms. Interpretations run counter to these defenses and are strenuously resisted. Much can be done if interpretive work is first centered around the problem uppermost at the time. This is usually concerned with emotional and physiological change, resulting in impulses and sensations which make the young person feel a stranger to himself. Anxiety can be reduced when we demonstrate our acceptance of the adolescent process as normal and transitory and this opens the way to further work. Often, one cannot easily interpret oedipal and incestuous wishes and fantasies and thus there are indications that short-term therapy directed toward increase of insight and in which the transference can be usefully employed, is more effective towards the end of the second and during the third adolescent stage. The problem is the assessment and selection of cases.

Parsimonious Biological Models of Memory and Reinforcement

DONALD PFAFF

Memory Storage

Current notions about biochemical changes that store information in the nervous system can be classified as "synaptic," "ribonucleic acid" (RNA), or "glial" hypotheses. The synaptic hypothesis states that the biochemical change takes place in the conduction between members of pairs of neurons. The RNA hypothesis states that the biochemical changes are alterations in the amounts of coded RNA molecules in the neuron. The glial theory holds that the biochemical changes responsible for memory directly involve glia as well as neurons.

Those who accept the synaptic and RNA hypotheses have gained large numbers of modifiable elements and efficiency in their use, but have lost parsimony in model construction. My argument is that fewer and simpler assumptions can be made to account for information storage by neurons.

Assumptions of the model and comments on parsimony—This model is based on the proposition that nerve cells act as units—that their inputs are integrated with respect to sign over all dendritic and somatic membrane areas to form a single input function and that output changes affect all axon terminals. The fundamental assumption is: A stored memory item is represented by changes in the probabilities of firing in a set of neurons. In each neuron of the set, a lasting change of probability of firing would be caused by some metabolic change in that cell.

The second assumption refers to the way in which changes in firing probabilities of neurons might occur: The more a nerve cell is forced to fire at rates higher than its spontaneous rate of activity, the more ready it will become, metabolically, to respond to future excitatory input with long bursts of high frequency firing. Likewise, the more a cell is prevented from firing at rates as high as its spontaneous rate, the more it will become susceptible, metabolically, to inhibition.

The model is parsimonious in that any type of metabolic change would suffice and in that it could occur in metabolic reactions which occur in all animal cells. Changes could occur in any or all of these functions: supply of the nerve cells of metabolic substrates; rate of glucolytic or oxidative metabolic reactions; synthesis of proteins; synthesis of RNA, and disposal of metabolic waste products.

Members of these large classes of possible chemical changes might work separately or together. They could affect several types of electrical functions: the passive electrical properties of the cell membrane; the transmitter-dependent permeability-changing mechanisms; the action potential threshold; the postspike recovery time; the effectiveness of the sodium pump, and transmitter release.

Adequacy of nerve cell supply—Since nerve cells are less numerous than synapses or RNA molecules, does a model using nerve cells as

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units have enough labile elements to account for the variety of memories stored? Neurons may undergo gradual changes in metabolic state, rather than being limited to the three simplest states: accelerated, decelerated, or unchanged. The greater the number of metabolic states a neuron can assume, the more information its state can represent. Also, the metabolic states of combinations of nerve cells could be used to store information. The number of combinations of cells increases very fast as a function of the number of cells. If a memory item could be represented by the metabolic alteration of any one of a set of neurons, and represented discretely by alterations of all the neurons in that set, the number of items which could be registered would be extremely large, and the location and degree of discreteness of the representation of items would be extremely flexible.

Another argument is that the variety of memories to be explained can be limited. Rather than having an indefinitely large number of discrete stimulus-response memory traces, the brain may package memory items into equivalence classes. One application of this kind of storage is that stimulus-response combinations that are equivalent in meaning for an animal could be equivalent in storage.

The phenomena of negative and positive transfer suggest that overlap among items arises when too much is stored at one time. This situation corresponds to that in which combinations of cells are used to store information: An item *can* be stored by using a small number of neurons, but to store the item completely takes all of the neurons in its "combination." What is gained by this possibility of interference among memories is that the potential number of different storable messages far exceeds the number of available cells.

This model relies upon a diversity of connections among plural stimulus and response representations. Owing to the large number and wide anatomical spread of the neurons of a set which represents a given stimulus-response bond, the only similarity among neurons of this set would be their synchronous, unusual electrical activity during the event to be remembered.

This advantage of the model strikes a pessimistic note for the study of the physiological basis of memory. Studying the mechanism of learning might involve studying a set of cells spread throughout the brain, all at the same time.

This difficulty and the emphasis on neuronal metabolic changes imply the need for new techniques in the study of the physiological basis of memory. Such techniques should reflect metabolic changes in single cells and allow study of a large number of cells in a single preparation. Histological techniques which afford indirect measures of overall cellular activity seem indicated. Electrophysiological experiments on memory would have to be designed so that activity in many separate structures could be recorded simultaneously.

Reinforcement

It has been supposed that the memory of an event consists of long-lasting metabolic adaptations in neurons to the amounts of electrical activity they exhibited during that event. Memories would be strongest when this electrical activity (or inactivity) is prolonged and exagger-

ated, since the metabolic adaptations would then be more pronounced. Reinforcement could then affect behavior by prolonging and exaggerating electrical conditions in the brain, thus increasing retention of the reinforced behavioral event. If a neuron is firing at a rate higher than its spontaneous rate at the time of behavioral reinforcement, then the internal result of reinforcement should cause it to continue firing at a high rate for a considerable time. Likewise, if it is firing at a rate lower than its spontaneous rate, reinforcement should cause it to continue firing at a low rate. Widespread, nonselective internal reinforcement mechanisms may be considered, including humoral and nonspecific electrophysiological mechanisms.

Humoral mechanisms—Brain structures intimately concerned with motivation and reinforcement—the hypothalamus and closely related structures influence the release of substances into the bloodstream and influence the chemical content of widespread brain regions. Sometimes the release into the bloodstream occurs very rapidly.

A mechanism of reinforcement would be one in which a part of the brain that responds to behavioral reinforcers causes release of an activating substance into the bloodstream. Suppose that this activating substance reaches active neurons more easily than inactive neurons. This assumption seems plausible, for active neurons, needing more metabolic substrate and having to excrete more metabolic waste products, might receive any substance faster than inactive neurons. Reinforcement is thus submitting neurons to positive feedback. Such metabolic adaptations constitute the memory of conditions at the time of reinforcement, which are the conditions necessary for the reinforced behavioral event.

An electrophysiological mechanism—Parts of the brain intimately concerned with reinforcement affect electrical activity of the entire cerebral cortex. The widespread electrophysiological effects of reinforcement and of changes in reinforcement-related brain regions suggest a nonspecific electrophysiological mechanism.

Suppose that nonspecific afferents to the cerebral cortex control the activity of the small stellate cells in the cortex. Stellate cells seem propitious to use because they appear in disproportionate numbers and complexity in higher organisms. They continue multiplying in large numbers after birth, and the time of their dendritic aborization coincides with the onset of conditionability.

These stellate cells receive much input from nearby cells and send much output back to them. In the spinal cord, small cells probably participate in positive feedback circuits and they may do so in the cortex.

The presentation of a behavioral reinforcer could excite a part of the hypothalmus or upper mesencephalon. The resulting volley of excitation over the nonspecific afferents from these brain regions to the cortex brings the stellate cells into their operating range of excitability, allowing them to function in positive feedback relations with the large cells near them. Active cells remain active, and inactive cells remain inactive. The memory of the reinforced behavioral event will be preserved due to the increased metabolic fitness of neurons to act as they did during the reinforced event.

Major Phenomena Derived

These models of memory storage and reinforcement have been constructed to show how few physiological assumptions need to be made to account for the occurrence of memory storage in the brain and reinforcement effects on behavior. The nodels are consistent with other, well-established phenomena in physiological psychology. Two examples are retrograde amnesia and self-stimulation.

Retrograde amnesia—Memory consolidation for recent events can be disrupted by strong mechanical forces (head injuries), electroconvulsive shocks to the brain, or administration of drugs. Memories of events which occurred long before are not so susceptible to amnesic agents. This distinction between short- and long-term memory corresponds to the distinction between temporary electrical changes and permanent metabolic changes underlying memory storage. Since the establishment of stable metabolic alterations in nerve cells (long-term memories) is supposed to depend on continued alterations in electrical activity (short-term memory) after the event to be remembered, interruption of that activity by head injuries or electroconvulsive shock would disrupt consolidation. Similarly, interruption of the metabolic adaptations themselves, as by administration of puromycin or anesthetic drugs, would block long-term memory formation.

Self-stimulation—Animals quickly learn to perform responses that are followed by electric shocks to certain parts of the brain. An animal could learn to self-stimulate using the same neural pathways that are used to learn responses for natural reinforcers. The main distinction between the intracranial stimulation and natural reinforcers would be that the former directly excites large numbers of the cells in the hypothalamus or related regions which are held to control positive feedback in the cortex.

This model implies that trying to test hypotheses about the nature of subcellular events during memory storage may not be so profitable as intensified study of the systematic (logical) properties of the neural circuits which store information in the brain. The physiological study of the routes of divergence and convergence of information flow in the brain, allowing plural representations of stimulus-response pairs, would be more profitable than, for instance, behavioral studies of the effects on memory of drugs which are supposed to act as synapses. The model suggests theoretical mathematical treatments of "connectedness" in neural systems, which could provide a framework for considering the results of physiological studies of circuits of information flow in the brain

Notes on Photographic Memory

NORMA E. CUTTS AND NICHOLAS MOSELEY

"I wish I had a better memory" is an almost universal aspiration. Certainly good memory is a valuable asset. How valuable it may be is indicated by an analysis of the biographies of 150 eminent persons.

That many eminent people have superior memories accords with studies of genius, where "strength of memory" is the trait that correlates most closely with intelligence. It also supports the conclusion that "undifferentiated memory" is a separate factor in intelligence.

We were struck by the number of subjects with "photographic memory," which is discussed in psychology texts as "eidetic imagery" and is described as the ability to look briefly at pictures and printed matter and to recall them as visual images. The image is said to be exact in detail. The term is popularly used to describe any extraordinary memory which enables a person to apprehend materials with great speed and reproduce them accurately after long periods of time. This usage is supported by the biographies. These portray individuals whose extraordinary memories differ according to the principal means of perception (visual, auditory, olfactory, tactile) and as to types of materials (verbal, mathematical, spatial).

In order to discover whether the phenomenon is really rare, we tested more than 1000 elementary and secondary school students and more than 100 adults. One test consisted of exposing a poster-size picture for 30 seconds and asking the subjects to answer questions on details. Another required the repetition of a 100-word prose passage read once. Another required the repetition of a similar passage read aloud to the subjects, and another the repetition of a similar passage which they copied out for themselves, reading aloud as they did so.

The students who did best on the tests and all the adults were interviewed and questioned about their visual and auditory mental processes as they learned the materials and while they recalled them.

No subject had a memory as great as those described in the biographies. But there was a close relation between excellent memory and high achievement in school, college, and careers. The students who ranked in the upper quartile on the memory tests all ranked in the upper quartile in scholastic standing. The reverse does not hold; effort and persistence may compensate for poor memory.

The tests and interviews show that practically everyone uses visual imagery, but that there are great individual differences. Some people report that to remember visual details they describe them to themselves verbally and recall the words when trying to imagine a spatial figure. When visualizing a picture or a page, most tend to "project" it in the position where it was when they were learning.

The people with superior memories are generally fast readers. The fastest readers incline to skim, picking out words keyed to their special interests. When recalling, they give the gist of a paragraph.

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When learning a passage in order to repeat it verbatim, they go over it again and again and move their lips as they do so. In contrast, some of the cases from the biographies not only read very rapidly, but also recalled much of what they read verbatim. The most complete and accurate immediate recall of printed materials by the adults and students interviewed was for passages which they copied out, reading them aloud as they did so; i.e., when they perceived the words visually, orally, and kinesthetically. The conclusion is that there is no such thing as photographic memory in the literal sense of taking a snapshot of a page and filing it in the mind like a photographic print which can be examined at will.

The type of memory frequently described by our subjects is that for materials perceived visually. Many learn whole paragraphs after 1–3 readings. Some have equal visual and auditory powers. If vision is defective, tactile and olfactory sensations become the basis of memory. A few individuals seem to have almost universal powers—visual, auditory, olfactory, tactile. There is little evidence as to how much these differences are due to innate capacities but there is evidence that supports the need for close attention and intent to remember. The observation that some students are better at reading than at arithmetic, and vice versa, is borne out by this study. Some relative deficiencies may be explained by lack of training but some persist despite high general intelligence and prolonged efforts at improvement. As with differences related to the senses, there are some individuals who have extraordinary recall for all types of materials.

Our materials suggest that memory is influenced by heredity, but is not a dominant trait. In general, the people interviewed reported having parents and children with high general intelligence, but memory varying from good to excellent. A similar pattern covering three or four or more generations is evident in the biographies.

Memory is best thought of not as a single mental operation but as a series of actions: learning, holding in mind, recall, and recognition. Quick learning facilitates the acquisition of information and puts the worker in a position to solve a problem with less effort and more speed than a less favored individual can. The power to hold information in mind lets the creative person manipulate materials and try out permutations and combinations without the need of concrete models. Faced with a specific detail, the person with a good memory can recall pertinent associations from his prior experiences and literature, without the need for laborious checking and cross-checking of indices.

The relation of superior memory to high achievement has some important implications for education. Teachers need to be aware of how easily students with exceptional memory excel on examinations—and too often escape intellectual challenge and the satisfaction of hard mental work. The early discovery of individuals with relatively great strength of memory is important in guidance, in singling out those who have a potential for high achievement and in encouraging them to prepare to live up to their promise. Finally, all students should be made aware of the role of memory not only in scholastic success but in practical work.

"Transfer of Learning" by Injection of Brain RNA as a Function of Time

LESTER J. SCHAD, JAMES E. ROLLINS, AND CHARLES W. SNYDER

Studies of "transfer of learning" effects by brain ribonucleic acid (RNA) extraction from trained rats and its injection into naive rats have been conflicting. In one study no difference was found, and in another performance of naive rats injected with RNA from trained rats was superior to that of naive rats injected with RNA from naive rats.

The studies supporting RNA effects have tested recipient rats 1–3 hours after injection, whereas studies disproving transfer have tested the rats 18–24 hours after RNA injection. In our study, time between RNA injection and testing of recipient rats was varied to verify "transfer of learning" effects and to determine the optimal transfer retention interval for a passive-avoidance task requiring light-dark discrimination.

The subjects were 80 naive rats. A Miller-Mowrer box was divided into a black and a white section of equal size by a guillotine door. A light was placed above the white section and a shock source was wired to the grid of the black section.

Rats show a preference for the darkest areas in a maze when permitted to explore freely. Avoidance training for this preference was carried out on 20 rats. These 20 rats and 20 others were decapitated and brain RNA was extracted and injected into 40 rats. The recipients were tested for light-dark preference 1, 2, 8, or 16 hours after injection.

On a 3-minute preference trial all 80 rats showed the expected preference for the black compartment and were randomly divided into four groups of 20: Learned-Donor, Control-Donor, Learned-Recipient, and Control-Recipient. Each Learned-Donor rat was confined in the black compartment and administered a shock for 5 seconds, after which the door was raised and the rat permitted to escape to the white compartment. Three shock trials per day for five days was sufficient for the rats to exhibit an inhibition of their preference for the black compartment. During these sessions the Donor-Control rats were administered an equal amount and duration of shock in a neutral environment. Two hours after the last training session both Donor groups were decapitated.

The Learned-Recipients received RNA from the Learned-Donor pool and the Control-Recipients from the Control-Donor pool. The Recipients were divided into four groups, each consisting of five Learned-Recipients and five Control-Recipients. Each group was tested at one time period following injection: 1, 2, 8, or 16 hours. Each rat was individually placed in the white compartment and allowed to explore both sections freely for 180 sec. The amount of time it spent in the white and black sections was recorded.

The results showed an apparent "transfer of learning" at 8 hours after injection, suggesting that previous negative results may have been due to nonoptimal intervals between injection and test.

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Selected Dyadic Aspects of Male Sex Aggression

EUGENE J. KANIN

Research on aggressive sexual conduct has been concerned with the violator and his characteristics, less with the victim, and rarely with the offender-offended relationship. This paper reports aspects of the heterosexual dyads involving male sex aggression.

Our data were obtained from a random sample of 400 undergraduate, unmarried university males. Of the 400 selected, 341 provided the data for this study. Eighty-seven reported at least one sexually aggressive episode since entrance into college. For an episode to be aggressive, two criteria were utilized: the male had to affirm making an attempt for coitus to the point of being disagreeable and offensive to the girl, and he had to perceive the female responding with offended reactions, e.g., fighting, screaming, crying, etc.

The offended reactions reveal an interactional phenomenon, i.e., the form they manifest is more dependent upon the pair relationship than upon the severity of the aggressive act. It was possible to associate the relationship with 143 reactions that could be grouped into four major categories: screaming and fighting; crying; pleading; quarrelling and turning cold. These reactions were associated with the degree of pair involvement. The more violent rejections—screaming and fighting—were more frequently elicited from females in the "pick-ups" and first dates. The occasionally dated female responded by quarrelling and turning "cold," while crying was most frequently noted for the more involved pairings of regular date and "pinned."

Sexual aggression is more apt to receive violent rejection from the superficially involved, disillusionment and disappointment from the more ego-involved. The more intimate but still relatively noninvolved occasional date displays a response appropriate to her degree of involvement, quarrelling and rebuffing. Although pleading runs consistently across all the relationship categories, it carries a different emotional connotation for the first date than for the regular date.

It could be countered that male aggression takes more violent and bizarre forms for initial dates, and, therefore, elicits more violent reactions. However, the accounts provided by these males fail to lend support to such a hypothesis.

The stage of the relationship involvement at which the male manifests offensive behavior may be influenced by tendencies he brings into the dating situation. These predispositions can originate in such factors as religiosity, urban-rural background, and social class. Social class background, however, is the only variable which appears to be significantly associated. Upper middle-class males most frequently report aggressions in the more durable and permanent pairings, while the middle-class and working-class males show a progressive decrease of episodes at that relationship level. Aggressive episodes at the most superficial stages of dating intimacy ("pick-up" and first date) show a reversed distribution, with the working-class characteristically involved

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at that stage and the upper middle-class least involved, while the middle-class occupies an intermediate position.

It is perplexing to find offensive sexual conduct in the durable pairings since the achievement of empathy and pair unity is assumed to be characteristic of these couples. A number of factors make aggression at this stage plausible, especially for the upper status males. These stages of dating intimacy are labels and do not necessarily reflect ego involvement. It is not uncommon for a male to nurture a heterosexual involvement into an advanced dating state to gain sexual accessibility. Upper status males invest more time and effort and show less impulsiveness in their efforts to obtain sexual intercourse. The deferment of sexual gratification should not be viewed as a period of undue sexual frustration. Being more satisfied than lower status males with prolonged bouts of superficial sexual stimulation makes dating relatively satisfying for the higher status males.

Casual sex contacts are difficult maneuvers for the upper status males. Lower status males are more adept at "picking-up." They engage in such activity earlier and frequent such places as amusement parks, bars, and dance halls where "pick-ups" may congregate. Consequently, a pool of the more sexually receptive females remains untouched by upper status males.

Some aggressive behavior should be expected in ego-involved pairings that are free of premeditated exploitation. Approximately 77 percent of the upper middle-class couples in the advanced dating stages were engaging in genital petting of the female prior to the aggressive episode. Continual stimulation and frustration at failure to escalate into coital activity can result in aggressive "blow-ups."

Female-provoked Sex Aggression

The victim may be responsible in moulding the offender. Some offended women played sexually receptive and provocative roles which helped precipitate the aggressive episode. Male and female subcultures contain the notion that sex aggression is the female's fault. Females verbalize that they "let it get out of hand," men that "she was asking for it." It is common for provocative or partially accessible females to be admonished by non-aggressive male companions that partial sexual accessibility is teasing that receives little tolerance with the "wrong" male companion. It is crucial to view not only the manner in which the female conducted herself but also how the male defined her conduct.

Cross-sex communication failure—The episodes can be approached from the vantage point of the antecedent erotic activity of the pair. Most were preceded by advanced consented sex play. This erotic involvement would enable a male to conclude that the female is completely accessible, particularly in superficial relationships where communication and empathy are at a minimum.

The female may play the instigator role in a more unequivocal and extreme fashion. Some females, deficient in socialization in the male subculture, unwittingly engage in provocative behavior. The typical male enters into heterosexual interaction as recipient of any subtle signs of receptivity broadcast by his companion. Sometimes these signs are innocently emitted by a female naive in erotic communication.

Cross-class communication failure—Communication failure in cross-class interaction may compound misunderstandings. Higher status males evaluate working-class behavior in terms of popular negative stereotypes. Certain activities and styles convey "looseness" or "wildness" to middle-class males. Overapplication of cosmetics, excessive adornment with "junk" jewelry, and "flashy" clothes may symbolize wanton women. Already stimulated by sexual involvement, response sets to lower-class stereotypes reinforce the upper middle-class male's suspicion that the female is accessible.

Misunderstandings stemming from cross-class dating can be noted in encounters between working-class males and upper middle-class females. The tendency of upper status females to engage in sessions of elaborate forms of kissing and light petting can convince lower-class males that her rejection of erotic invitations constitute feigned protests she feels necessary to avoid the stigma of "loose" or "easy."

Social control—There are situations where the conduct of the female evokes a calculated form of aggression. Here sexual aggression is an instrument of social control, a means employed by the male for coercing a female he defines as deviant to comply with dating conduct norms. "Teasing" and "golddigging" constitute norm-violative female behavior. In some male groupings this conduct is seen as a sufficiently serious breach of expectations to be met with resistance and terminated. Sexual aggression is one form of punishment with which the deviant female is prompted to return to conforming behavior—conformity here being predictability. If she acts like a "good girl" she will be reciprocated, but if she acts like a "bad girl" she will have to perform like one. Sexual aggression to punish the "exploiting" female is frequently implemented by working-class males. The greater subscription to the double standard, sharper cleavage of the male and female worlds, and greater sanction of physical aggression as a means of resolving difficulties may explain its more frequent occurrence. Misunderstandings stemming from the working-class males' inability to decipher the middle-class females' penchant for "necking" and petting can bring about definitions of "teasing." The upper status females' experience with males of her own class leads her to accept her date's favors, e.g., dinner and entertainment, without expectations of having to reciprocate sexually. Her agreement and/or unwitting encouragement for what the working-class male views as an expensive investment, provides the foundation for the definition as "golddigger."

Deviant role expectations—One aspect of the pair relationship which precipitates an aggressive episode involves pairings in which the male believes the female is sexually promiscuous. Whether she *is* promiscuous is of little importance. The female of "easy virtue" constitutes a deviant role which may require strict compliance. The role of "easy" qualifies her, in some male groups, as public property; she is categorically deindividualized. Her promiscuity, real or imagined, provokes her male companion to demand her sexual services. With unusual frequency, our respondents justified their actions by: "If the girl has already had it," or "If she puts out for others." These responses come almost exclusively from double standard males. They can then sanc-

tion sexual activity for males while affirming that females should remain chaste.

Comparative Characteristics

The responses of aggressive males concerning religion, intelligence, social status, age, education and judgments of attractiveness of offended females were compared with data from the nonaggressive men for the last three girls they dated. Nonoffended females tend to be more frequently of the same religious background than the offended. A greater percentage of nonoffended females were of equal intelligence than offended females. The offended females are more often viewed as inferior and of lower status. Age differentials are quite pronounced; 76.1 percent of the companions of nonaggressive males and 54.9 percent of the offended females are about the same age. The educational status of the two groups indicates greater similarity of the nonaggressive pairings. Although it was suspected that attractiveness would distinguish the two categories of women, no appreciable difference was observed.

Some aggressive men may be more prone to direct aggression to females of certain characteristics. Double standard males believe it is more wrong for a female to engage in premarital coitus than for a male. If he aggressively attempts to gain sexual accessibility, it can be assumed that he perceives these females as undesirables. The single standard permissive male views premarital coitus permissible for both males and females. Consequently, those with whom he attempts to enter into sex liaisons should not possess qualities signifying them as undesirables. We found that double standard males are much more likely to evaluate negatively the females they offend on two traits, physical attractiveness and intelligence.

By placing sex aggression in the context of the male-female relationship, and granting that a certain male personality is requisite, selective socialization experiences of the male will prompt him to aggressive conduct when encountering females who provide a "sanctioned" stimulus.

Prolongation of Certain Effects of Amphetamine by Chlorpromazine

L. Borella, F. Herr, and A. A. Wojdan

The effects of amphetamine can be antagonized by chlorpromazine, but small doses of chlorpromazine can intensify or prolong amphetamine-induced hypermotility, stereotyped behavior, self-stimulation, and anorexic activity. These effects of chlorpromazine resemble the amphetamine-potentiating effects of imipramine-like antidepressants.

The purpose of these experiments was to investigate the effect of chlorpromazine on hypermotility and hyperthermia caused by amphetamine, as well as its effect on the disposition of amphetamine in the brain.

Male albino rats were used. General activity was measured in cylindrical jiggle cages. The rats were placed in cages and left there for one hour for acclimatization. After this period, drugs were administered and the rats were returned to their cages. Recording of motility was started 45 minutes after drug administration and continued for 12 hours at hourly intervals. Brain levels of amphetamine were measured by a modification of the colorimetric method.

For dl-amphetamine 8.5 mg/kg was a near-maximal stimulating dose. This dose was administered alone and in combination with 0.9, 1.8, 3.6, 7.2, 14.4, and 28.8 mg/kg of chlorpromazine. Amphetamine caused a maximal stimulation during the first hour, and the group remained hyperactive for 6 to 8 hours. The simultaneous administration of 0.9 mg/kg chlorpromazine did not modify hypermotility. Doses ranging from 3.6 to 28.8 mg/kg of chlorpromazine antagonized the stimulation caused by amphetamine during the initial hours after treatment. There was a dose-effect relationship in this antagonism. Doses of 1.8, 3.6, and 7.2 mg/kg of chlorpromazine considerably prolonged the amphetamine hypermotility. Six hours after the administration of these doses the motility of the groups was higher than that of the amphetamine group. This delayed stimulation by the combinations was seen 12 hours after administration. In contrast, the activity of the amphetamine group in the sixth hour did not differ from that of the water-treated controls.

A dose of 14.4 mg/kg of chlorpromazine completely antagonized amphetamine stimulation during the first six hours after treatment, but this effect was followed by an increase in motility. Abolition of amphetamine stimulation was obtained with 28.8 mg/kg chlorpromazine, but this treatment did not produce a delayed hypermotility during 24 hours of observation. The behavior of the rats during the delayed stimulation caused by the combined doses of chlorpromazine and 8.5 mg/kg amphetamine was indistinguishable from that caused by amphetamine alone.

d-Amphetamine caused hyperactivity lasting for 4–5 hours. l-Amphetamine was much less stimulating, and by the third hour the motility was at the level of the controls. The combination of chlorpromazine with either isomer of am-

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phetamine resulted in a significant reduction of the initial stimulation. In the case of combination with d-amphetamine there was a delayed stimulation. The activity of this group was significantly higher than that of the d-amphetamine group at the fifth and sixth hour after drug administration. l-Amphetamine in combination with chlorpromazine also showed a delayed stimulation. The mean values of the combination in the 4- to 6-hour interval were significantly higher than those of l-amphetamine.

dl-Amphetamine, 8.5 mg/kg, produced the expected hyperthermia, which lasted six hours. Chlorpromazine, 7.2 mg/kg alone, lowered temperature by 1.8°C, 1 hour and 45 minutes after administration. The duration of hypothermia was about 7 hours. The body temperature of rats treated simultaneously with amphetamine and chlorpromazine was similar to that of water-treated controls in the first four hours after treatment. In the seventh hour, when both amphetamine- and chlorpromazine-treated groups had returned to the control level, the combined treatment resulted in a rise of the rectal temperature, which lasted for at least 10 hours.

Hyperthermia induced by 8.5 mg/kg amphetamine was neither delayed nor prolonged by 1.8 or 3.6 mg/kg chlorpromazine. With these doses, only a partial antagonism of amphetamine hyperthermia was observed. A dose of 14.4 mg/kg chlorpromazine administered together with 8.5 mg/kg of amphetamine resulted in a marked hypothermia which lasted throughout the observation period.

Determination of brain amphetamine levels was carried out at different times after administration of dl-amphetamine, 8.5 mg/kg. Determinations of brain levels of amphetamine were done simultaneously from rats treated with 8.5 mg/kg amphetamine alone and in combination with 7.2 mg/kg chlorpromazine.

There were 5.5 $\pm$ 0.5 μg amphetamine/g of brain 1 hour and 45 minutes after the administration of amphetamine alone. Five hours later 0.35 $\pm$ 0.1 μg/g remained, but no amphetamine could be detected in subsequent determinations. In the combined-treatment group the brain levels of amphetamine were significantly higher than in the amphetamine-treated group, and the rate of disappearance of amphetamine was slower than that of the group treated with amphetamine alone.

Determinations of the brain level of amphetamine were also carried out after administration of d- and l-amphetamine 4.2 mg/kg by themselves and in combination with chlorpromazine, 7.2 mg/kg. l-Amphetamine gave a higher brain level than the same dose of d-amphetamine. When chlorpromazine, 7.2 mg/kg, was combined with either of the isomers, the brain levels were higher than the levels obtained after amphetamine administration alone.

The similarity of pharmacological and biochemical findings on the interaction of chlorpromazine or imipramine with amphetamine suggests that the former compounds may have similar actions, altering the metabolic disposition of amphetamine.

Status, Ideology, and Adaptation to Stigmatized Illness: A Study of Leprosy

ZACHARY GUSSOW AND GEORGE S. TRACY

The USPHS Hospital at Carville is the only leprosarium in the continental U.S. Established in 1894 as the Louisiana Home for Lepers, it came under PHS jurisdiction in 1921. The resident population is about 300. There are outpatient clinics in New Orleans, San Francisco, San Pedro, and Staten Island. Total number of cases in the U.S. is not known; the estimate of 2,000–2,500 has been used, but workers in the field estimate the number at two to three times more. On a worldwide basis the prevalence is estimated at 12–16 million cases.

Over 100 patients, Carville residents plus New Orleans and San Francisco outpatients, were interviewed intensively. The patients equal about one-third of the stable Carville inpatient population and approximate 4 percent of the estimated leprosy cases in the U.S. The study also included patient group discussions, individual psychotherapy sessions, interviews with Carville staff members, recordings of staff meetings, and participant observation of hospital and colony life.

The legal status of patients is unclear. Aliens are usually constrained to seek treatment at Carville or face deportation. State laws are varied and differentially enforced. Criteria for "discharge" from Carville vary with disease classification, clinical judgment, rehabilitation potential, and assessment of patients' responsibleness. Indefinite outpatient treatment may be advised.

The popular view of leprosy portrays the disease in black terms. The very name evokes an image of a maximally ravaged, untreated victim. This view is typically found in fantasies and expectations of newly diagnosed patients. Many think of it as a legendary disease or one associated only with "jungle" life, and are astonished that leprosy exists in industrial nations.

Epitomizing the bleakness of the popular view is the fact that it excludes the idea of amelioration. New patients anticipate being banished "for life." The notion of "high" contagion is usually strong. The urgency with which some of them consent to hospitalization indicates their perception of the situation as "extreme" and requiring confinement.

The "folk" view of leprosy represents two levels of experience. In terms of deformity, pain, and societal reactions, the image describes actual leprosy in untreated cases of advanced deterioration. The "folk" view also represents a fantasy of the worst that can happen to one's body. The two darkest fates are to "lose one's mind" as in lunacy or to "lose one's body" as in leprosy.

Diagnosis of leprosy signals a sudden, radical, undesired, and unanticipated transformation of the patient's life. Many activities and relationships must be modified or given up. The situation is compounded by chronicity and need for continued prophylactic actions. The disease sets boundaries which impose a severe truncation of normal status and role activities. Self- and other-stigmatization are but two facets contributing to a major *identity crisis.*

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The patient realizes that he has not changed as a person, but society regards him as totally different. If he can conceal his condition, he can, within limits, engage in behavior open to him on the basis of a social identity in which others do not know of his stigma. Once the condition is known, the patient is faced with the problem of "building a world." Patients handle the discontinuity and dissonance between self and social identities in a variety of ways, and their adjustment varies according to their relation to others who hold different views about leprosy.

We are concerned with situations in which the stigmatized develop an ideology counter to the dominant one that stigmatizes them. The most significant element for this to take place is a mutually reinforcing collectivity of like-stigmatized people, a subculture capable of maintaining effective immunity from the dominant code. Such collectives may be of the homosexual variety or the "hippie" movements which set themselves apart, reinforcing each other's actions while setting social, emotional, and cognitive distance between themselves and their critics.

One such collectivity is that formed by the patients at Carville. It is a "quasi-open residential treatment community," with a well-developed patient culture which has evolved a distinctive and coherent stigma theory in isolation from the mainstream of American social routines.

The Patients' Theory of Stigma

A diagnosis of leprosy, followed by hospitalization or outpatient treatment, introduces the patient to the medical facts and to the misconceptions and uncertainties related to the disease. Patients learn that Biblical references and contemporary leprosy are associated only in historical myth and misconception. Scientific and medical data are adduced to show that leprosy has been mistakenly identified with other skin and nerve conditions and that for centuries it has been a catchall category for innumerable and unexplained deforming illnesses that have afflicted mankind.

Much is made of leprosy as a "mildly contagious" disease, but the epidemiology is uncertain; and the question is raised that if it is only "mildly" contagious, how come so many people have it? At Carville it is routine to relate that in nearly three-quarters of a century of operation only one employee contracted the disease and this man was reared in the leprosy endemic area of Southern Louisiana.

Proposals are advanced by patients and leprosy workers to change the name of the illness to Hansen's Disease. The terms "leper" and "leprosy" are considered opprobrious and inappropriate except in the ancient Biblical context. The present-day condition is termed "Hansen's Disease" or "so-called leprosy" in order to clarify the distinction between present reality and past symbol and myth.

The stigma, or more correctly the destigmatizing, theory is advanced in various ways. It plays a part in all presentations to the public by patients or their representatives. It appears in explicit form in *The Star,* a journal published by patients and distributed internationally. The theory is a formal explanation of the stigmatic nature of their illness which permits patients to minimize the notion that they are severely

afflicted and provides them with evidence that society has wrongly labeled them. It supplies hope, optimism, and certainty through the suggestion that the social and psychological problems patients face are due to society's defective view of the disease. The assumption is that ostracism and rejection will diminish and disappear when social misconceptions are corrected. The hospital functions as a disseminator of the stigma theory by encouraging visitors, tours, seminars, and planned programs utilizing local groups and the mass media. An average of 13,000 visitors annually tour the hospital.

Since the patient had a nihilistic view of leprosy before his own socialization into the world of patients, the position that society is wrong is one he can endorse. The theory functions to drain energy and hostility away from physical and medical aspects of the disease that are realistically distressing, but for which little can be done. The theory emphasizes a social and historical perspective rather than the medical and physiological aspects of the disease since it is an attempt to introduce certainty and optimism into an experience that is uncertain, and for some considerably less than hopeful.

The theory has value for patient adaptation and dediscreditation. Psychologically, leprosy patients exhibit a sense of total rejection by society and by themselves. This sense of self-rejection sometimes offers the patient an opportunity to work out intrapsychic conflicts that antedated the illness. For regardless of the discrediting nature of the disease, as an identity mark it cannot but impress upon the individual an acute awareness that if he did not know who he was before, there can be no question as to who he is now.

Most patients elect to conceal their leprosy identity from society. Many take up permanent residence at the hospital where they live, work, and sometimes marry. They protect themselves by "colonizing." Through exposure to and socialization by other patients they incorporate the stigma theory into their own world view.

The Theory as Legitimation for Career Patient Status

Many patients reveal their condition to society as educators bringing information about leprosy to the public. Such career patients engage in activities which are legitimized through the elements of the stigma theory and carry the approval of the majority of other patients.

The relationship of such patients to society undergoes an important shift. For some it furnishes a clear identity for the first time, providing them with altruistic service roles which, considering the fact the majority of patients at Carville are lower-class and rural, would not be open to them. Some write articles and books, speak on the radio, appear on television or before community groups of various types both out in the community and on patient-panels to Carville visitors.

Some career patients bear little evidence of their condition. This may seem logical insofar as such patients present the best case for leprosy, serving as examples to contradict the "erroneous" view of the disease and lending credence to the patients' special stigma theory of leprosy. But there is a paradox in that these individuals are the ones who could most easily "pass." That they do not choose this path is a com-

ment on the fact that stigma may provide the basis for a total self-conception.

A limitation of the patient-educator relates to the information he may impart. His function decrees that he present leprosy in a favorable light. The picture of the disease must be designed not to alarm. Emphasis is placed on correcting errors and misconceptions rather than on elaborating the details of leprosy.

Career patients require a place to which they may retreat. Individuals who attempt to maintain the dual statuses of career patient and private citizen often experience severe role conflicts. Patient-educators often use an alias so that adverse publicity will not precede or follow them when they wish to settle down.

Though destigmatizing ideology and the concept of career patient have been presented in relation to leprosy, such statuses and ideologies are not limited to this illness alone. The mental health movement is directed toward attenuating the stigma of mental illness and reducing the public's horror of it. In alcoholism there is an attempt to shift public belief in "weakness of character" as a component to a more acceptable emotional illness model. Urban homosexuals are active in their attempts to alter public views and stereotypes.

Stigma theories develop and achieve a more articulate, coherent, and viable form to the extent that four conditions obtain: there is an inadequacy of the existing social model to deal with the total problem; persons involved in the stigmatized condition are engaged in close and prolonged interaction so that a subculture may develop; the stigmatized are sufficiently free of daily encroachment on their lives by dissonant public views; and a few of the "discredited" are able to enunciate a coherent "stigma theory" and willing to risk the concomitant exposure. These few can then, as "career patients," legitimately use the theory for their own adaptation and, more significantly, to effect a transformation in society's attitudes toward their deviant groups.

Psychological Factors in the Outcome of Human Cancer

KATHLEEN M. STAVRAKY, C. W. BUCK, J. S. LOTT, AND J. M. WANKLIN

Among patients with malignant disease, some progress more rapidly than others to a fatal outcome, although all have the same treatment. Among the explanations is that of differing host resistance to the tumor.

Others contend that psychosomatic mechanisms may affect the growth and dissemination of cancer. It is generally accepted that fear, anxiety, and hostility have an effect upon the course and prognosis of pathological and clinical conditions. This study has been concerned with the influence of psychological factors upon the progression of cancer.

Psychological tests were given to patients with cancer at the time of their first contact with the Ontario Cancer Foundation Clinic. Personality structure was assessed with the Minnesota Multiphasic Personality Inventory and the Differential Diagnostic Technique, a projective technique. To measure intelligence, the Verbal Component of the Wechsler Adult Intelligence Scale was used. Outcome was defined as duration of survival from the date of first admission for treatment. Minimum follow-up was 40 months and maximum 66 months. Among 204 patients there were 83 with breast cancer, 36 with cancer of the cervix, 28 with cancer of the lung, and 57 with cancer of other sites.

The results suggest that cancer patients show some psychological abnormality. On the Differential Diagnostic Technique, a high proportion showed loss of emotional control or hostility or both. While this finding reinforces etiologically oriented studies which describe a variety of psychological abnormalities in cancer patients, one does not know if the abnormal patterns precede the onset of cancer or arise after its diagnosis.

Perhaps more intriguing is the finding that patients with the most favorable outcome are more frequently hostile than cancer patients who survive an average length of time. The combination of hostility and above-average IQ is particularly outstanding in the favorable outcome group. A small but significant positive correlation between IQ and that component of the Differential Diagnostic Technique which measures overall emotional control suggests that in sick persons the IQ may be measuring not only intelligence but the ability to retain emotional control under severe stress. An individual who has a favorable prognosis would appear to be a well-integrated person with considerable underlying hostility or aggressiveness, however he might appear on the surface.

This study differs from others in that it does not confirm findings that patients with a poor outcome show the greatest psychological abnormality. It is noteworthy that the picture of the patient with a favorable outcome is the antithesis of the "hopelessness" or "giving-up" reaction. Little attention has been given to the role of the "giving-up reaction" in the prognosis of cancer. These results are of sufficient interest to merit testing in a larger series of patients.

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The European Educateur Program for Disturbed Children

THOMAS E. LINTON

Treatment of emotionally and socially maladjusted children in the U.S. is a large-scale national problem. Many of our assumptions, as well as practical procedures, are not used or accepted in several European countries. Their work with maladjusted children appears to have progressed significantly beyond that in the U.S.

The Educateur Program

A profession has emerged in France, Holland, and Denmark: childcare workers, called "educateurs" in France and "orthopedagogues" in Holland. The most advanced work is in France where there are 26 colleges providing 3,000 -4,000 educateurs each year for a range of institutional placements. There is great demand for the educateur, and the profession is well accepted in the mental health field in Europe. The training program in France is an independent discipline; it is not subordinate to education, social work, or psychology.

The movement started in World War II which produced many neglected and abandoned children. Individual leaders established centers for these children and realized the need for youth workers to serve as model adults and substitute parents. Europe has a tradition of training youth workers in pedagogical theory and practical activities so the wartime camps for displaced children began to develop training programs.

The educateur is not a case worker, not trained to diagnose and do therapy with the maladjusted child, not a teacher, and not a houseparent or ward attendant. He is a highly trained professional youth worker concerned with the total life process of the individuals in his group. He is trained to use all leisure moments of a child's life, to program this free time in a manner that engages the child's physical, moral, social, and intellectual development.

In the educateur concept there is emphasis on the positive and normative aspects of adult and child behavior. The educateur not only programs the life of the child but serves as an adult model for the child to emulate. The educateur is closest to the child from morning to night. His involvement is not only professional but personal in the sense of concern for his daily welfare. He lives in the institution and provides a structured activity program for all nonschool hours. His main function is to use his "model and normative" personality as well as his knowledge of crafts and physical skills as avenues through which the resocialization of the child can occur.

The relationship between the educateur and the child is not based on a verbal exchange, nor does the educateur impose his psychological understanding or provide interpretation of the child's behavior. The relationship is a therapeutic process based on the child's modeling his behavior on the educateur and gaining insight into behavior through what the educateur does rather than through verbal exchange.

The screening of candidates for educateur training is important. In

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France, as in other European countries, educational policies create a labor pool from which recruits may be drawn from educateur training. The educateur's work is one profession that does not involve rigorous academic requirements. Hence, it provides a social and economic opportunity which would not be otherwise available.

The training program is a three-year course. About 50 percent is an internship in centers for maladjusted children. These placements provide a realistic awareness of children's problems, and provide the training center with a means of evaluating the student's competencies with handicapped children.

About 25 percent is craft and vocational training. The idea is to reach the child through the activity. It is the means through which the child and the educateur can arrive at shared interests, human understanding, and behavioral modification. Emphasis is placed on the value of the activities in coping with problem behavior and in the positive channeling of misdirected energy.

The educateurs receive training in several activity areas, such as ceramics, planning, creative design and layout, home economics, maintenance and interior decoration, wood and metal work, cooking, music, dramatics, puppets and marionettes, choral work, dancing, photography, and indoor and outdoor recreational skills. The educateur also uses entertainment media such as films, plays, television, radio, as well as field trips and camping outings as a means of gaining involvement with his children.

One year of training emphasizes group living. The training staff uses guided group interaction and sensitivity training to help the students understand the social-psychological factors involved in individual and group life.

The remaining fourth of the training consists of academic work, and during the final year, thesis writing.

The educateurs work in and manage institutions for delinquents, retarded, physically handicapped, socially and emotionally disturbed, the homeless, the neglected, unwed mothers, and several other agency settings. They function as street workers in slum areas, usually working out of a youth club.

Educateurs are responsible for the management and direction of many centers. They use services of psychologists, psychiatrists, case workers, and teachers, but the management of the institution is in the hands of the educateur-director and his staff of fellow educateurs.

English "Approved Schools"

In England, approved schools are state-sponsored residential institutions for delinquent children. They differ in several ways from their U.S. counterparts. Not only is the emphasis on vocational training but there is general integration in the whole service throughout the country. The system is centralized and coordinated by the Home Office in London. The more than 100 schools are licensed, financed in part, and inspected by the Home Office staff. This centralized approach seems to be characteristic of England, France, Holland, and Scandinavia.

Centralization also permits less overlapping and competitive institutional work. It tends to eliminate exploitation of people in need of social and psychological assistance because the services are inspected and agreed-upon national standards

must be met. The centralization makes it more feasible to provide a range of integrated and differentiated children's services.

In contrast, most cities in the U.S. have a vast and confusing array of overlapping and professionally competitive services. Competition in the market place is one thing, but in the mental health field another approach is essential if the problems of our cities are to be solved. The U.S. is unique, as a powerful and successful democratic system, in its fear of national planning in the field of mental health. There are few professionals in the mental health field who are unaware of the chaos, disorganization, and professional exploitation which deeply and tragically scar our work. It is time that we faced up to the reality that much of our work is seriously inadequate.

Education for Children with Severe Emotional Problems

SHIRLEY KREMENAK

The Children's Unit at the Independence Mental Health Institute is the most developed State residential program in Iowa for children severely disturbed emotionally. It is a 40-bed facility serving children 7–16.

Because the child's problems are related to the structure and interaction pattern of his family, his parents must engage in casework therapy with a social worker. The willingness of the parents to aid in the treatment is a major criterion in selecting children for admission.

A variety of problems is presented by the children admitted. Many have been expelled from school. Some are school refusal problems. Others are admitted because of depression, suicidal attempts, homosexuality, other sexual difficulties, psychotic mentation, or habit and trait disorders such as encopresis, enuresis, elective mutism, pernicious vomiting.

The child finds himself in a therapeutic environment 24 hours a day, 7 days a week. Results are best when the clinical team drafts a prescription for each child to be carried out by all staff members. Each child has an individual therapist. No part of the treatment program is carried out in isolation. Each staff member contributes his expertise to the child's treatment in accordance with the team prescription.

In a year, about 83 children, of whom only 19 were girls, were treated; 20 came from middle-class homes and the rest from lower middle- and lower-class homes. Thirty were from single-parent families. The child-rearing in all 83 homes showed a lack of consistent parental guidance and controls.

A small group were reared by institutions for so many years they have no recollection of their parents.

Many children in the Unit have never learned "what leads to what." They have difficulty making "if . . ., then . . ." connections. Almost all the children have difficulty relating to others. Frequently, they are angry at their parents for letting them down. Because they cannot accept the idea that they have such feelings toward a parent, they take out their anger on others.

The unit school—Hilltop School—has an elementary and secondary program. The secondary program is departmentalized into four academic areas. The elementary program offers an ungraded primary program. Children in the intermediate grade level range so widely in age and abilities that two programs are offered. The older, more disturbed children are in one class offering remedial work in a token-approach program. The younger, less disturbed children functioning nearer their grade level are in the other program.

The teachers and recreational therapists offer a coordinated, educationally oriented program. Pressure put on a child in recreation will often motivate him to try harder in school. During vacation periods, the teachers function as recreational therapists, and gain additional insight into their pupils by working with them in a less structured setting. The teachers also become more familiar with problems of ward management and recreation supervision.

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The objectives are determined by the background and needs of the pupils. Most of the children are disadvantaged as well as emotionally disturbed. They frequently had not understood much they had been exposed to in school, and received little intellectual stimulation at home. They attended overcrowded, understaffed, and unattractive urban schools.

Over half were educationally retarded by a full year and one-fourth were severely retarded. Their school difficulties could not be attributed to low intelligence.

More than half had severe reading difficulties. Some children in their early teens were reading at a primer level. High school students reading below grade level were so clever at concealing their disability that the public schools from which they came were unaware of their handicap.

The majority displayed difficulties in arithmetic. It was not uncommon to find a high school student reading at college level, yet functioning at fourth-grade level in arithmetic.

Hilltop school operates on the assumption that if a child has not acquired the tools for learning in the basic skill areas, he will not acquire the feeling of competence that accompanies successful learning. If a child achieves in school, he thinks better of himself. Our faculty believes that a child's ability to achieve satisfactorily in school has much to do with his mental health.

Because the children have come from homes lacking predictability, Hilltop imposes a structured environment where the child learns to predict what behavior leads to which consequences. High standards for classroom behavior are set and unattractive consequences are consistently applied to those failing to meet behavior expectations. Because the child frequently thinks poorly of himself, expects to fail and has a fear and hatred of authority figures, another objective of Hilltop is to create an accepting, comfortable working relationship between faculty and pupils.

Perhaps the most important concept each teacher teaches is "if . . ., then . . ." The teachers also help the child anticipate the probable consequences of his acts.

In modifying behavior, use of a system of food or token rewards is avoided. A flexible system of privileges and staff approval as rewards, and removal of privileges and isolation as punishment, is utilized. Punishment is interpreted to the child as a temporary measure intended to help him cool off until he is again able to control himself. He is told that we can handle him if he has difficulty handling himself. But we would prefer not to. Some teachers use food reinforcers (e.g., small candies) for a particular child on a limited task. They have found this approach works well when used sparingly.

Preparation for the child's discharge begins when he is admitted. He is kept aware that his family is "out there" awaiting his return once his problems are under control.

As the child acquires more effective coping skills and insights, he goes home for weekend visits. He is prepared for each visit by his therapist, just as the parents are prepared by the social worker. Prior to discharge the child makes a week's visit so the parents may judge how ready they are to be a family once again. The principal makes contact with the community school and suggests techniques for working with the

child. Sometimes, the community school principal and teachers confer with the unit staff. The child gains security from seeing the link between home and hospital, and school personnel observe how the child relates to the unit staff and what expectations for behavior are being realized by the child.

In the area of prevention, the staff is spending a greater amount of time consulting with schools and community agencies. Staff conducts workshops for teachers, school administrators, school nurses, social workers, school psychologists, school counselors. Lectures are offered to clergymen. We teach other professionals to use our services and work effectively with us, and in turn we learn from them.

Our society is producing so much pathology that the greatest effort of all the helping professions, working cooperatively in a multitude of approaches, is required to meet the needs of children and families to develop a healthier society.

Innovations in Correctional Programs for Juvenile Delinquents

ALBERT ELIAS

It is difficult to support with scientific certainty the concept that training schools and other correctional programs are experiencing change and innovation. Some older, more experienced workers state that they have lived through many fads, but that the structure of the institutions as well as the basic and perennial problems have remained intact and unaffected. Other workers argue that training schools are part of a society in motion and that many segments of the community are facing up to innovations in order to cope with a space-oriented society.

The reality is somewhere in between. Innovations do come and go in the training school field just as they do in other areas. They rarely have a dramatic impact, for innovations simply do not take hold overnight. But changes do occur and they do have an impact.

My thesis is based on the following assumptions: Present programs have demonstrated high failure rates. We must find ways to reduce correctional populations; the U.S. has more of its population confined in correctional programs than any other country in the world. The growth process cannot be facilitated by viewing children as objects who need injections of treatments X, Y, and Z. Training school manpower needs cannot be satisfied by the available professions. My last assumption is the most critical—effective innovations in training school programs require a commitment to change, on the part of the inmates and the staff, through direct involvement in planning, decision making, and program operations.

Implicit in any training school program is a concept of adolescence. Some workers view it as a period of accelerated physical and/or psychological and emotional growth. Adolescence can also be defined as a social process whose central aim is to develop a clear and stable self-identification. As our society becomes more manipulative and less humane, the self-defining process in adolescence breaks down. Such a society has no use for adolescents.

It is not surprising that many adolescents find themselves in correctional institutions. The objectives of these institutions are alleviation of symptoms and removal or modifications of forces, factors, or conditions which produce the delinquent act and protection of the community, persons, and property. Training schools attempt to achieve these objectives by custody and order, education and recreation, medical and psychological care, religious training, and maintenance of the physical plant. The "correctional establishment" is dedicated to the preservation of traditional forms. And this happens because correctional systems have no systematic procedures for incorporating innovations.

A number of innovative programs warrant attention. Some are extensions and modifications of existing programs and techniques. Others have been borrowed from outside disciplines. Most are too new to warrant the status of established programs. They can be categorized into three groups; use of offenders as agents of change; modified educa-

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tional techniques; and group methods.

Use of inmates to cope with the problems of their rehabilitation is a response to the shortage of professionals and to the unavailability of a manpower pool that could supply skilled correctional technicians. Current theory of rehabilitation which is psychiatrically oriented implies that unless a correctional worker has professional training, he may do irreparable damage to delinquents if he tries to change them. We must recognize that there are not and never will be enough psychiatrists. We will not get these personnel—nor-social workers and psychologists—for the same reasons we are not getting them now. They do not want to talk to our delinquents at our prices.

Offenders and ex-offenders are being used in correctional programs in various States. In halfway houses in California inmates and staff have joined in administering the program of rehabilitation. In New Jersey, Group Center graduates are being employed as human resource aides serving in antipoverty programs, school systems, hospitals, and welfare agencies, as well as in teacher training and staff development programs. The result indicates that it is possible to create a social climate in institutions that is conducive to allowing offenders to become involved in their own and others' rehabilitation. One goal is the use of ex-offenders, including juveniles, to assist the community-at-large in coping with its social problems.

Perhaps the most exciting innovations have occurred in education. Although only two were developed in a training school, others are relevant for a correctional setting.

The first is experimental learning or self-initiated learning. This type of learning takes place most effectively when the student is face-to-face with a problem to which he wants to find a solution. It requires that the teacher enter into a relationship with the student, as a person, and not as a sterile tube through which knowledge is passed from one generation to the next. It requires resources for learning—books and other printed materials, opportunities for observation, tape recordings, and personal experience can contribute to learning.

Another innovation is programmed instruction. This technique is being used at the Draper Correctional Center in Alabama. Except for literacy education, they have a school that is entirely self-instructional. Theoretically, an inmate can move from elementary school to college preparatory training, with the use of programmed instruction. Students receive reinforcement and reward rather than criticism and punishment. Although programmed instruction has risks, it is a powerful tool for learning especially among offenders.

Two innovations were developed in training schools: the CASE program at the National Training School for Boys and the *English in Every Classroom* at the Maxey Boys Training School in Michigan.

The CASE project (Contingencies Applicable for Special Education) is designed to measure behavior change and increase learning through manipulation of the environment. It is similar to programmed instruction in that it is based on operant conditioning. It assumes that a properly structured environment can help direct the behavior of the students to achieve academically and socially desirable goals. It involves an incentive system that provides the core of a token economy.

English in Every Classroom is based on two concepts, saturation and diffusion. "Saturation" refers to the assumption that children will read by being surrounded with newspapers, magazines, and paperbacks rather than textbooks. "Diffusion" refers to the opportunity for each student to write each day, not only in every classroom, but also in his own room. In the process, reading and writing are diffused throughout the entire curriculum.

One other innovation, Age Graded Education, was developed at the University of Michigan. School children have their learning enhanced through becoming participants in a total teaching-learning experience rather than being recipients in a traditional student role. The whole class participates as actors or observers in the situation. Elementary school children of an upper grade teach English and mathematics to lower grade children. The response of children and teachers has been excellent and the results have been rewarding.

Training schools have opportunities to experiment with new educational techniques and to develop their own learning models. They have an obligation to face up to one of the most glaring failures in modern education—the mass production of virtually illiterate youths.

Group methods are not new, and the question of whether group techniques are more effective than other techniques has not been resolved. We need to improve the caliber of social scientific investigations into the effectiveness of correctional treatment programs before this issue can be met. Another aspect of group treatment techniques that has not been carefully studied is their role in the management of the institution. Institutions with group programs tend to experience fewer hostile, destructive reactions from the inmates than institutions which are custodially oriented.

Innovations not only have to be proved in pilot projects, but they also have to fight for survival. Often they fall by the wayside, because of lack of public support and because the correctional establishment is unwilling or unable to integrate them into the administrative structure. Innovative programs are difficult to institute. Their acceptance is limited and tenuous. They are faced with resistance from staff, the bureaucracy and the community, rather than from the inmates who, after all, have nothing to lose and a world to gain.

A Longitudinal Study of Emotional, Social, and Academic Functioning of Adopted Children

ANNA S. ELONEN AND EDWARD M. SCHWARTZ

In 1942, several child-placing agencies requested that some babies be given intelligence tests before placement. A plan was devised under which there was a periodic check on the children through the 6th birthday. The next testing was after the 16th birthday.

At the time of the followup psychological examinations, records were made of emotional adjustment, physical condition, and major events reported by the adoptive parents such as accidents, deaths, family moving, child's reactions to adoption or births of siblings, etc.

Of 43 children placed in adoptive homes, 28 were first tested at three months, seven at six months, seven at nine months, and one at 12 months. By six months, 16 had been placed in adoptive homes; by 12 months, 11 more; by 16 months, seven more. Two were not adopted until 24 months and seven were adopted after this age. One child was moved directly from the hospital to an adoptive home. Nineteen children had one placement prior to adoption; 13 had two; eight had three; one had four; and one had been in seven placements.

About half the children showed above-average intelligence once the IQ scores leveled off following the adoption. Most were in good physical condition in their first boarding placement. As placements increased, physical condition changed from 65 percent in the good category to 80 percent in the fair grouping. Few children fell in the poor category.

The educational achievement of the natural mothers did not differ drastically from that of the adoptive parents. The socioeconomic status of the adoptive families was relatively high, with 23 percent in the high executive and professional category, 11.5 percent in the semiprofessional category, 26.5 percent in the minor professional and business group, and 27.5 percent in the skilled labor category. The majority of the families were Protestant; four were Catholic; and one was Jewish.

Gains following adoption—There was a general increase in the level of intellectual functioning as well as in physical health. Many children received relatively inadequate stimulation in the boarding homes, many boarding mothers putting emphasis on physical care, not on intellectual activity. The temporary nature was probably a factor, too.

Learning about adoptive status—The agencies recommended that the children be told at an early age that they had been adopted. Most families did so, sometimes by reading an appropriate book to them, generally by answering the children's questions as they arose. In one case the child was traumatized, but overcame the reaction in about 6 months. That the children had accepted knowledge of adoption without overt reactions was reported by 64 percent of the families. In 8 percent the parents felt the child never accepted that he had been adopted. That the knowledge of adoption had different meanings for the child at different age levels was mentioned by those parents who reported that the child had been upset in adolescence about his being adopted. At the time of final check, when the sub-

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jects ranged in age from 16 to 22 years, 12 percent of the children had had a recent period of disturbance regarding adoption. In most, the emotional upset was set off by marriage or induction into the armed services.

School adjustment—General learning difficulties for some were reported at the beginning of schooling and in high school; others had difficulty throughout the school years. Learning difficulties in specific areas were not so frequent; they occurred mainly in single areas such as reading and arithmetic, or in combinations of reading and spelling.

The children, particularly the boys, tended to be underachievers. The number of dropouts was large. Almost 41 percent of the children left school before graduation.

Educational achievement was stressed in the homes, judging by the overall school achievement level of the children. Almost 50 percent of the children attend secondary schools or colleges, which brings the school achievement level for the group above the level for the general population.

The school problems of the adopted children range from initial adjustment problems to difficulties throughout schooling; 21 percent ran into serious difficulties. Another 23 percent had undefinable difficulties that ended in a thorough dislike for school. In spite of this wide variety of poor reactions to school, almost 36 percent had no difficulty at any time.

Separation experiences—One difficulty occurred at nursery school and kindergarten level. Another period was on entrance to high school. For some children there were repeated episodes of difficulty, in grade school and high school.

When the school adjustment patterns were compared with the number of placements the child had experienced, no relationship emerged. Neither was there a relationship between the age of adoption and school difficulties, although there was a slight tendency for those placed at six or seven months to have only initial problems, rather than severe adjustment problems throughout school. Those placed at four months seemed freer of difficulties. No relationship was found between the child's reaction to knowledge of his adopted status and school adjustment and performance.

Reactions to change—A check on how the children adjusted to the advent of another adopted child, or the birth of a child, showed that four reacted negatively, two apparently were delighted, and others evidenced no marked reaction. No relationship appeared between serious illness, hospitalization, or accidents, and the child's general adjustment. The children did not react sharply to moves by the family to another location, and not so strongly as they had to separations from one or both parents. There were exceptions; some children reacted so badly that their adjustment never returned to its former level.

Changes such as death, divorce, and remarriage in the family had demoralizing effects. There were few cases in which divorce occurred, but in each the result was emotional disturbance in the child; remarriage was apparently accepted.

There were no indications of excessive upset regarding the mother's working. Most of the adoptive parents seemed to fulfill their role in supplying emotional security and, in most cases, not only material necessities but many luxuries.

Comparisons of poorly and well-adjusted children—Some differences

emerged when the families of children on opposite ends of the adjustment scale were compared. The problem children had, at some point, shown difficulty accepting the fact of adoption. The poorly adjusted children were preponderantly from well-to-do homes, indicating the possibility of overindulgence with material rewards. Mothers of well-adjusted children were warm and relaxed. This was not characteristic of the mothers of the problem children. Another difference was that in most cases a grandparent lived with the better adjusted children for long periods. Apparently the grandparents served as auxiliary parents, aiding and supporting the parents in periods of stress.

Patterns of delinquency were investigated. Delinquency was found in 30 percent of the group adopted between the ages of 7 months and 21 months. Children adopted within this age range exhibited the severest delinquency. No child adopted after 21 months had severe difficulty. Only 13 percent adopted prior to 6 months had shown delinquent behavior, and in all cases it was mild. The total adopted group compared closely with a comparable nonadopted group living with their natural families. In both groups 17 percent demonstrated delinquent traits.

The overall evaluation of the best- and worst-adjusted children suggests that the adopted child has a need to communicate openly about his status, his background, and his feelings about being adopted, during various stages of his development.

A child's concerns about adoption are intensified if the adoptive parents feel insecure themselves and are not able to respond adequately to the child's questions and feelings. Adoptive children do not have additional emotional and social problems just because they are adopted, but they will have severer problems if vital situations bring a reaction of fear and anxiety from significant adults in their environment. There should be counseling for adoptive parents to help them meet the child's questions regarding adoption. Techniques for this type of service should be explored.

Psychotherapeutic Strategies

HILDEGARD E. PEPLAU

The aim of nursing care of psychiatric patients is to assist the patient to struggle toward full development of his potential for productive living in the community. This aim requires strategies that will aid the patient to resolve obstacles that stand in the way of full development. These obstacles are: disturbances in thought, feeling and action; and lacks and gaps in the development of intellectual and interpersonal competencies essential for healthy social interaction in the community.

For a tactic used in nursing care to be considered psychotherapeutic, the approach must have demonstrable impact on the behavior which is representative of an aspect of the pathology or of an asset of the patient. The tactic must be sustained over time; there are no "magical" tactics which, if used once or twice, will produce substantial, constructive, and lasting effects. Nursing strategies must be used persistently, in situations in which a specific pathological item is presented by a patient and observed by the nurse. The alertness of the nurse in immediately noticing, assigning meaning to, and responding specifically to the item of behavior presented by a patient is crucial to psychotherapeutic outcome.

One facet of mental illness is replication of inept behavior and the earlier social interactions from which it derived. A firstborn child may attempt to retain his status by reporting "bad" behavior of his siblings. If the parents accept the message, his relationships with his siblings will deteriorate. This child will use the same tactic to enhance his powers with a teacher. If the teacher courts further messages, a consequence will be isolation from his peers. Later, through high school, sometimes in schools of nursing, and in the employment situation, this behavior is used, exploited, held in contempt by others.

This item of pathological behavior, coupled with other kinds of pathology and interpersonal incompetence, is seen in some patients diagnosed as schizophrenic. The patient will use the only behaviors he knows to negotiate interpersonal relationships. He will become a ward pet—and in most hospitals he will succeed—by bringing messages about misbehaving patients.

The psychotherapeutic strategies of the nurse are verbal tactics. The nurse can say, "What are you telling me for?" or, "You have something to say about Joe Smith? Very well. You and I will go and talk with him directly." The aim is not merely to receive the patient's message but to introduce a stimulus which will force the patient to evolve new behaviors in response to it.

The dependency of psychiatric patients is another concern. Here, the psychotherapeutic strategy is not used in relation to the whole problem but is directed toward the particular variant of dependency that the patient presents at a particular moment. A patient may test the nurse to see whether she will take over and run his life. He may ask, "May I smoke?" "May I go to the bathroom?" "May I lie on the bed?" These bids for permission sound innocuous, but if the nurse responds "Yes," she has not only given per-

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mission but has communicated that she is the one who decides. The patient will then make bids for disapproval by remaining silent, leaving the interview without saying anything, or coming later than expected. If the patient is dependent on an authority figure for disapproval—which is characteristic of schizophrenic patients—and if the nurse comments about the foregoing bids, the dependency need is reinforced.

There are subtle approaches, as when the patient says, "What time is it?" or, "Did I tell you my brother's name?" The patient is acting out his dependency by requiring someone to be his timekeeper or function as his memory. The more the nurse functions as the memory of the patient, the less he develops his memory, because potential is developed through use.

This is what milieu therapy is about: recognizing recurring problematic behavior patterns and disrupting such replication within the day-to-day nurse-patient interactions. It can be added that such disruptions increase the anxiety of the patient, at least initially. Dispensing of comfort in the psychiatric setting is reinforcing pathology and abetting chronicity.

A second area has to do with recognizing the thought pathology inherent in a patient's language behavior. We need to develop psychotherapeutic strategies that will have impact upon the problematic language item of the patient and to study the effect which the persistent use of these strategies has on patients. The patient diagnosed as schizophrenic usually has a disorder of thought process manifested in language behaviors. He uses language to conceal not to reveal information, to increase not to decrease the work of the hearer, to allude to ideas rather than to state them directly—to test the competence of the therapist.

At first the patient's language and the tactics are probably used consciously. As these tactics become habits, the patient loses control over them. The language behavior makes constructive interpersonal relationships difficult, because language is the main medium of exchange in social relationships.

One variant of language difficulty is the inept use of pronouns. Healthy people use "he," "she," "its," "we," and "they" as shortcuts in communication. If the hearer does not know the person referred to and asks who "he" is or "they" are, the healthy person responds by giving the name. Schizophrenic patients lose the referents to pronouns. Their original use of pronouns was purposive, but because the use of "they" has become a habit, the identity of the people to whom this pronoun refers has been lost.

Patients diagnosed as paranoid use the pronoun "they" recurringly. If the nurse persists in asking "Who are 'they'?" the patient will follow distinct steps in achieving the names of the persons referred to. This is one of the observable regularities in the behavior of paranoids, if you work with them long enough. This involves hard work. You might have to ask some patients "Who are 'they'?" 200 times over 200 days before you get names. You do not work on the thought disorder; you work on the language item with which the patient does his thinking.

A patient may say, "It bothers me." If the nurse fails to ask, recurringly, "What is 'it'?" the patient will not recognize that he has failed to be direct in giving the necessary information.

Many patients who have the problem of nonseparation from some incorporated authority figure use the pronoun "we" to speak for the unit (me and the incorporated figure). Here too, if the nurse fails to ask, "Who is 'we' as you are using it?" the patient perpetuates this language behavior. In the community, you do not have to ask every time somebody says "we"; you can guess to whom the pronoun refers. With a schizophrenic patient you cannot guess because he has a private way of using language, including pronouns. The nurse also may use "we" to refer to herself and some incorporated others—in which case she helps to perpetuate the patient's difficulty. There are greeting cards about nurses that say, "Have we had our enema today?" Get rid of this language behavior!

Another language pattern of patients is the use of "you know" or "everybody knows" or some clause suggestive of mind reading. If the nurse acts as if she knows, she compounds the patient's language difficulty and reinforces his mind-reading tendencies, ideas of reference, and finally, delusional thinking.

The psychotherapeutic tactic that will have impact on this language usage and upon the thought process of the patient is to ask, "What is it I am supposed to know?" or, "No, I don't know. Tell me." The idea is that the nurse needs information from the patient and that she can neither assume knowledge with any accuracy nor read the patient's mind. If the nurse persists in this tactic, eventually the patient will say, "You know—No, you don't know; let me tell you." Thus, pathologic and healthy behavior will be exhibited side by side. (A similar juxtaposition will occur with pronouns: "They—I mean my wife and the children.") When this language behavior is observable, the nurse has evidence that the psychotherapeutic tactic is beginning to have impact upon the patient's language and thought. Finally, the "you know" will drop out. But it will never drop out if no one provides a new stimulus so that some doubt is thrown into the language system.

These tactics do not, of course, encompass all there is to psychiatric nursing—a very complex field which is beginning to develop psychotherapeutic strategies that may be useful in helping patients to get on with the business of living in the community with a modicum of comfort and success.

Thirty-Two Observers and One Patient: A Study of Diagnostic Reliability

PETER E. NATHAN, MARCIA M. ANDBERG, PETER O. BEHAN, AND VERNON D. PATCH

Low reliability of psychiatric diagnosis is well established. Clinicians may differ in a diagnostic formulation because of personal, idiosyncratic interpretations. Or, a diagnostician may label the same behavioral pathology differently on different occasions because he does not use a consistent set of decision rules. Finally, low reliability may result from the fact that patients who share common psychopathology often manifest the same symptoms with such differences in frequency and intensity that their common diagnoses are lost.

To identify and measure the sources of diagnostic unreliability, a systems analysis of current practice in psychiatric diagnosis was performed. It included a set of 21 decision models (flow-charts) detailing a range of diagnostic cues (behavioral psychopathology) and the decision rules by which these cues are integrated for diagnosis. The decision models were translated into the Boston City Hospital-Behavior checklist (BCH-BCL), which was used to describe the inter-observer reliability of 32 health professionals who diagnosed a psychiatric patient presented to them at the same time.

The professionals attended a conference at the Psychiatry Service, Boston City Hospital. They ranged in age from 24 to 59 years (median 31) and in experience with psychiatric patients from three months to 30 years (median two years); professional identities included Harvard Medical School professor of psychiatry, psychiatric resident, medical resident, neurological resident, staff psychiatrist, social worker, psychiatric nurse, and occupational therapist.

The case history included: A 36-year-old, married white male was admitted for treatment of chronic alcoholism. He had a 20-year history of alcohol ingestion, and a previous psychiatric admission a year before. He had suicidal ruminations and bizarre symptoms. He was convinced that there were people in his home whom he could not identify, resulting in his calling the police and fire department. He had feelings of unfamiliarity, during which he could not recognize his home or determine which room he was in. While looking at TV, he became confused and had a convulsive attack, with loss of consciousness and incontinence. He believed he was the Boston Strangler.

He became convinced that he knew strangers and had this same sense of familiarity while working in strange houses or passing through strange towns. He heard a voice whispering his name and uttering threats. While driving, he lost consciousness only to find himself in a strange place 50–60 miles away. He had developed a pain in his chest and planned to operate on himself if the doctors did not do so. While engaged in conversation, he had lapses of consciousness which lasted from a few seconds to a minute or two. He had been seeing animals in his bedroom; he was convinced they were real. Shortly after finishing a meal, he became

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dizzy and drowsy and had to lie down. This did not occur when he had just had glucose but occurred on taking any protein.

Father is a chronic alcoholic; mother is "an exceptionally nervous person." There is no other family history of epilepsy or alcoholism. The patient worked as an electrician and had a good work record. He had a pleasant personality, was well-liked and considered a good family man. He had attacks of rheumatic fever at 16 and 18 years of age; an attack of epistaxis two years ago; removal of second right costal cartilage for Tietze's Syndrome two months prior to admission.

Examination revealed a well-nourished, healthy-looking young man with hepatomegaly, splenomegaly, and conspicuous spider naevi over face, chest, and neck. He had moderate tremor of outstretched hands. Examination of other systems was normal. Urinalysis and hematological examinations were normal. Serum glutamic oxalacetic transaminase concentration: 82 units/ml. Serum alkaline phosphate concentration: 6.0 Bessey Lowry units/ml. Normal electrolytes, glucose tolerance test, and normal proteins. A.W.R. was negative for serum and CSF. Barium swallow showed conspicuous esophageal varices. Skull and chest films were normal. An EEG done six months prior to admission and two done at the time of admission revealed right temporal lobe dysfunction. A brain scan was negative.

A diagnostic conference was held as usual, with no member informed that it would include an evaluation component. The patient's psychiatric resident presented a summary of his behavior; the patient was interviewed by the senior psychiatrist, and was questioned by members of the audience. The BCH-BCL was then given to each attendee. Only after all instruments were completed was further discussion of the patient initiated.

The BCH-BCL is a 100-item questionnaire designed to elicit the presence of almost any symptom or complex of symptoms of psychopathology. It is divided into six sections. Section I differentiates among psychosis, psychoneurosis, and neither condition, and Sections II–VI look for abnormal psychomotor, perceptual, cognitive and affective behavior, and disordered states of consciousness. Each symptom is described in the checklist and defined operationally in an appendix.

The 32 observers were divided into four groups on the basis of professional identity and experience with patients and with diagnostic nosology and diagnostic procedures. Group A consisted of six senior psychiatrists, all of whom had had a three-year psychiatric residency and been in psychiatric practice for from one to 30 years. Group B contained eight psychiatric residents. Group C_1 was composed of eight nonmedical mental health professionals. Group C_2 contained three first-year psychiatric residents, two second-year neurology residents, two second-year medical residents, and three fourth-year medical students.

Thirty observers conferred 14 diagnostic labels; two declined to make a diagnosis. The labels were of three types: a functional condition (e.g., "paranoid schizophrenia"), an organic condition (e.g., "temporal lobe epilepsy"), or a combination (e.g., "depressive reaction and temporal lobe epilepsy").

The more experienced observers were more inclined to confer an

organic label than were the less experienced. No difference in number of symptoms observed by the four groups was found in gross presenting symptoms, psychomotor behavior, cognitive symptoms, and affective symptoms. But differences were found in perceptual symptoms: the least experienced group saw significantly more symptoms of perceptual psychopathology than the more experienced groups. Differences were seen also in disordered consciousness: the most experienced observers saw more symptoms of disordered consciousness than the others. In total symptoms seen, Group C_2 saw more overall symptoms than the other groups.

Analysis of patterns of symptom choice reveals differences among the groups. More experienced observers saw two categories of symptoms more often than the less experienced: those which serve to attenuate the grave implications of an otherwise serious symptom (i.e., suicide anxiety and depression seen as occurring temporally contiguous to a precipitating environmental circumstance) and those symptoms which lead to a diagnosis with organic implications (i.e., confusion and clouding of consciousness).

The more experienced observers chose a homogenous group of symptoms less often than the less experienced observers, i.e., those which lead to a diagnosis of psychosis, particularly schizophrenic psychosis. All observers saw in common several symptoms which, because they are observed both in psychotic and psychoneurotic conditions and in organic and functional conditions, have nonspecific diagnostic implications.

That the medical students, medical and neurological residents, and first-year psychiatric residents saw most overall symptoms of psychopathology is probably explained by the reluctance of inexperienced clinicians to exclude any diagnostic possibilities. Presumably the more possibilities one mentions, the better are one's chances of being correct. The fact that the same group saw more symptoms of perceptual disorder is probably explained in a similar way. Evaluation of the subtle symptoms of perceptual disorder is more difficult for the inexperienced clinician than evaluation of other kinds of symptoms.

The results suggest that the BCH-BCL may be useful for studying determinants of diagnostic unreliability, but additional studies are needed before its applicability to broader problems can be claimed.

Mental Health News Digests

Community Mental Health Centers in Kentucky

Almost 80 percent of the population of Kentucky now resides in areas covered by community mental health centers. Statistics suggest that these centers—there are 17 in operation in the State—are at least in part the cause of an accelerated drop in the State's mental hospital population.

There had been a continual decline from 1963 to 1966 in the number of patients resident in Kentucky mental hospitals. From June 1966 to June 1967, there was an additional drop, greater both absolutely (370 patients) and relatively (8 percent of the 4,744 patients in 1966) than in any preceding one-year interval. The rate of resident patients per 10,000 of estimated State population fell from 15.6 to 14.5.

That the drop in hospital population was caused in part by a shift of patients to community mental health centers is suggested by the fact that the number of patients under care in community centers rose from 2,681 in 1966 to 3,580 in 1967. Provisional data for 1968 show that this trend in patient movement, from the primarily custodial care of large State hospitals to the modern, individualized treatment of the community mental health centers, was continuing and even further accelerating last year. As of November 1, 1968, there were 3,887 patients resident in Kentucky mental hospitals and 5,005 patients under care in community mental health centers.

The State of Kentucky is fourth in the Nation for total number of community mental health centers. Kentucky will probably be the first State in the Nation with all areas being served by a center.

Kentucky has also had innovative features in its State plan for mental health centers. One is the development of a regional board to participate in the formulation and guidance of the program of each center. Another is a "reaching out" characteristic, to bring mental health services to the maximum number of people within easy distance of their homes. One Kentucky center uses a "circuit rider" approach to provide services to isolated families and settlements. Other methods for reaching as many patients as possible include outpatient and partial hospitalization services in schools and churches, mobile clinics, and treatment teams which reside in outlying counties. The country general store, as well as the local media, is being used to advertise these new services.

All of Kentucky centers are similarly organized, with an Information-Screening-Referral service a major feature, to function as a nerve center for provision of mental health services in an area. The I–S–R provides: an effective method of getting people to the right service without delay; advisory support to other individuals and groups working with the emotionally disturbed; and a clearinghouse for coordination of all community services to avoid duplication of effort and to insure continuity of care for all patients. The I–S–R service is always located for easiest access to the greatest number of people.

New Freedom for the Ill Offender

Rogers Hall, the maximum security building at Arkansas State Hospital, which houses psychotically

disturbed felons, once was viewed simply as a closely guarded repository for the "criminally insane." The Hospital now has initiated a more effective treatment program and improved the maximum security unit's image with the rest of the hospital and the community.

New staff members were added, and weekly staff tours were begun to improve employee attitudes toward the unit. To reach the community, the hospital began a series of meetings with prosecuting attorneys, police officials, circuit judges, deputies, and any others involved in committing persons charged with crimes. Of greatest importance was the need to develop better techniques for treating the unit's criminally psychotic patients. The changes in Rogers Hall have resulted in 75 releases from the service during 1967 with only six of those patients returning in 1968, a return rate of 8 percent compared with 23.4 percent for the hospital as a whole.

Hospital officials have switched from the traditional custodial organization to a new unit system in which the patient is admitted, treated, and released from the same unit, and is treated by the same people from admission to discharge.

Treatment is administered to the unit's 70 patients in three phases. The hallmark of the first phase is a poker chip. Patients earn these tokens by some specific, acceptable behavior. They receive them for making their beds, maintaining proper hygiene, attending classes, doing assigned ward housekeeping duties, attending gymnasium activities, and so on. They must spend their chips in order to get meals, cigarettes, and freedom of the grounds. The first treatment phase also includes drug and other therapy.

During the middle phase, the staff begins to deal with emotional drives and stresses through intensive group psychotherapy. The token system is dropped in phase two, work therapy on the ground is started, and there is increasing supervised freedom of the grounds.

At this point, a hospital official recommends to the court that criminal charges be cleared so that final disposition of each patient may be made. Patients who are cleared of charges and freed of psychosis then transfer to the exit group, where they live on an open ward free to come and go as they please from 8 A.M. to 8 P.M. They have full-time work assignments on the grounds, and their contacts with the community are greatly increased through shopping trips, movies, and other public entertainment. When this phase ends, patients are referred to the State Vocational Rehabilitation Service for job training and placement, back to their homes, or to a nursing home.

The Project Director is Dr. Oscar Kozberg.

Rehabilitation Center at Middletown State Hospital

A new three-million dollar rehabilitation center has been opened at Middletown State Hospital in New York. It was designed to provide a more suitable environment than traditional institutional buildings. The architects tried to achieve the effect of a busy small town, with the building's one and two-story elements enclosing two courtyards. The entrance courtyard has an outdoor dining area that functions as a miniature "town square" with glass arcades leading to workshops, classrooms, cafeteria, and

other parts of the building. The other courtyard, a quiet grassy space surrounded by a terrace, opens the library, classrooms, and therapy clinics to the outside.

The center is the first of fifteen that are in various stages of study, design, or construction.

GROW—Group Relations Ongoing Workshops

GROW was chartered in July 1968, and its first program started in September 1968 by presenting 20 different theories and methodologies developed to help people work together for "more meaningful personal and group problem solving experience." The expanded program now consists of four sections: group methodologies, self awareness and sensitivity training, problem solving group leadership training, and mental health technicians training. GROW's address is 312 W. 82nd St., New York, N.Y. 10024.

Mental Health Services in Appalachia

The development of local mental health services is progressing rapidly in the 12 Appalachian states; a total of 33 centers are operating or being developed.

These centers provide mental health coverage for about 33 percent of the region's 303 rural counties. This is a better average than is found nationally, where only about 20 percent of the rural counties have local mental health services.

The region's comprehensive centers will make mental health services available to about 2.6 million of the 8 million persons living in rural Appalachia. They represent the first time local mental health services have been available to most residents. Previously, most persons in Appalachia needing mental health treatment had to travel many miles to receive it.

The incidence of mental illness in the region is high. Schizophrenia, alcoholism, marital and family-child problems, learning deficiencies linked to malnutrition, and a disturbing school dropout rate are particular problems.

The development of community mental health centers in Appalachia is the result of a joint Federal effort. Support comes from the Appalachian Regional Commission and the National Institute of Mental Health. Commission grants are used as matching monies so that centers can qualify for assistance under the Community Mental Health Center Act.

National Book Award

The 1968 National Book Award for books in science was won by Dr. Robert Jay Lifton, research professor of psychiatry at Yale University, for *Death in Life*, a study of the survivors of Hiroshima.

Recovery, Inc.

Recovery, Inc. is an association of nervous and former mental patients founded in 1937. A nonprofit, nonsectarian organization, Recovery is managed primarily by former patients. Weekly meetings are held, and there is also a system of mutual aid telephone calls. The headquarters are located at 116 S. Michigan Ave., Chicago, Ill. 60603.

Joint International Conference on Mental Health

"Mental Health in the Community" is the theme of the Joint International Conference on Mental Health to be held in Washington, D.C. on November 17–21, 1969.

Cosponsored by the World Federation for Mental Health and the U.S. National Association for Mental Health, the Conference represents the first official collaboration in the history of the two organizations for the goal of providing an opportunity for international volunteers and professionals in the mental health field to meet and learn from one another. Further information may be obtained from Dr. Paul V. Lemkau, 615 North Wolfe St., Baltimore, Md. 21205.

Master's Level Community Mental Health Nursing Program

A program leading to a Master of Science degree in community mental health psychiatric nursing has been started at the Arizona State University College of Nursing in Tempe. The program is the first of its type in Arizona and one of the few in the U.S. The project is to train nurses in community mental health techniques and philosophy so that they may assume teaching or leadership positions in the developing community mental health program.

The four-semester curriculum will emphasize prevention within a community setting rather than the more traditional patient care provided in a hospital setting.

The first students will be admitted in the fall of 1969; the first year of the project, which started last fall, is being used to plan and develop the curriculum. During the first year, students will study development and behavior of the individual and the community. In the second year the emphasis will be on the nurse's role and function in community mental health. Specialties may include teaching, administration, or health problems related to specific groups. The basic curriculum will include research and courses in human development and in the social, biological, and behavioral sciences. In addition to classroom activities and seminars, the nurses will receive clinical experience at area hospitals, community mental health and mental health-related community service areas.

Ellamae Branstetter, professor of nursing, is project director.

Committee for Psychedelic Drug Information

The use of psychedelic drugs has become a matter of national interest and concern. In 1966, a group of young people in the San Francisco Bay area decided to make public their reasons for taking and then abandoning drugs.

The Committee for Psychedelic Drug Information has attempted to fulfill this goal by:

- Presenting programs at colleges, high schools, and junior high schools.
- Speaking to community groups.
- Compiling bibliographies of research on LSD and marijuana.
- Speaking before church groups of parents, young people, or all ages.
- Providing access to helpful publications on drugs.
- Consulting with persons planning programs of drug education.

Requests for information may be obtained by writing to the Committee at 2605 Haste St. #104, Berkeley, Calif. 94704, enclosing a large self-addressed stamped envelope.

☆ U.S. Government Printing Office: 1969—

recent nimh publications

Single copies of these publications may be obtained from the Office of Communications, National Institute of Mental Health, LL02, 5454 Wisconsin Avenue, Chevy Chase, Maryland 20015. A complete list of all publications available from the NIMH may also be obtained from the Office of Communications. If a price is given, the publication may be ordered in quantity from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Enclose a check or money order payable to the Superintendent of Documents.

The Comprehensive Community Mental Health Centers Program. Grants for Construction and Staffing. A 12-page pamphlet describing the program and how to apply for Federal funds.

Mental and Emotional Illness in the Young Child. Reprint of an article from PTA Magazine, by Bertram S. Brown, M.D. PHS Publication No. 1877. 25¢.

Utilization of Psychiatric Facilities by Children. Includes data on patterns of care by age, sex, diagnostic, and other characteristics of children under 18 years of age. Prepared by the Biometry Branch, NIMH. PHS Publication No. 1868. 75¢.

Proceedings of the Sixth Annual Conference. Mental Health Career Development Program. A 96-page booklet containing the presentations at the conference.

From Witchcraft and Sorcery to Head Shrinking. Society's Concern about Mental Health. A speech by Stanley F. Yolles, M.D. at the 12th HEW Forum. PHS Publication No. 1864. 30¢.

A Comprehensive Review of Geronto-Psychiatric Literature in the Postwar Period. A 97-page booklet containing a 34-page review of the literature, and 2,747 references, by L. Ciompi. Translated from Fortscritte der Neurologie Psychiatrie und ihrer Grenzgebiete (Stuttgart), 34 (2) :49–159, 1966. PHS Publication No. 1811. $1.00.

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